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A Mixed Methods Study on factors which Influence the performance of the Nursing Students of the Barbados Community College in the Regional Examination for Nurse Registration.

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A Mixed Methods Study on factors which Influence the performance of the Nursing Students of the Barbados Community College in the Regional Examination for Nurse Registration.

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DECLARATION OF AUTHENTICITY OF THE THESIS

I hereby declare that this thesis, submitted in partial fulfilment of the requirements for the Degree of Doctor of Health, contains no material previously published or written in any medium by another person, except where appropriate reference has been made**.**

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Cheryl C. Weekes

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"I can do all things through Christ who strengthens me" Philippians 4.13.

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ABSTRACT

This study was designed to examine possible factors which had the potential to affect the performance of student nurses of the Barbados Community College (BCC) in the Regional Examination for Nurse Registration (RENR), and to determine whether their occurrence was unique to BCC. The methodology used was mixed method and employed the use of two questionnaires, a focus group of nine students and six interviews of faculty of the Nursing Department.

The quantitative data was generated from questionnaires completed by 74 final year nursing students, and 80 graduates of the nursing programme. The qualitative data was gathered through the conduct of six interviews of faculty and a focus group discussion of final year students. Additionally, data in relation to the performance of students in the RENR for a six year period (2007-2012), and the GPA of the graduates, and their performance in the four RENR examination papers were analysed to determine if there were any relationships between the data and its significance to the performance of the students in the examination.

The study concluded that there were factors which needed to be addressed in relation to student performance, such as curriculum reform, review of clinical supervision, and the development of a course to mitigate the poor performance of students in essay writing. There is also a need to increase the amount of time allocated towards student preparation for the RENR, and the provision of greater tutorial support. The BCC will therefore need to examine from a standards and quality perspective the factors such as age, gender and GPA, and their impact on the performance of the students in the RENR examination. These factors will play a pivotal role in the adjustment of the nursing curriculum to promote improved student performance in the RENR.

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ACRONYMS

ADN	Associate Degree in Nursing
BCC	Barbados Community College
CARICOM	Caribbean Community
CARIFORUM	The body comprising the Caribbean ACP (African, Caribbean and Pacific) States for the purpose of promoting and coordinating policy dialogue, cooperation and regional integration.
CIDA	Canadian International Development Agency
CSME	CARICOM Single Market and Economy
CWRA+	College Work Readiness Assessment
CXC	Caribbean Examinations Council
FMH Clinic	Frank, Michael, Holder, Emergency Medical Clinic
GEFT	Groups Embedded Figures Test
GPA	Grade Point Average
GCE	General Certificate of Education
ICN	International Council of Nurses
ISO	International Standards Organization
MDGs	Millennium Development Goals
MLT	Medical Laboratory Technology
NCB	Nursing Council of Barbados
NCLEX-RN	National Council Licensure Examination-Registered Nurse
PAHO	Pan American Health Organization
PEPFAR	President's Emergency Plan for AIDS Relief
PEPS	Productivity Environmental Preference Survey
QEH	Queen Elizabeth Hospital
RENR	Regional Examination for Nurse Registration
RN	Registered Nurse
RNB	Regional Nursing Body
SPSS	Statistical Package for Social Sciences
VARK	Visual, Aural, Reading/Writing and Kinesthetic sensory modalities
WHA	World Health Assembly
WHO	World Health Organization

GLOSSARY OF TERMS

Associate Degree	This is the three year course of study where the students complete 107 credits to satisfy the matriculation for the award of the designation Associate Degree at the Barbados Community College.
Blueprint	This is the curriculum framework which guides the training of nurses in the Caribbean who will write the RENR licensure examination for practice.
Caribbean	This refers to the group of English-speaking Caribbean islands that are surrounded by the Caribbean Sea, many of which were former British colonies.
Constructivist Theory	This theory speaks to the individuality of the learning experience where the learner is not a passive participant in the process, but engages in the process of the learning exercise to make it meaningful.
Curriculum	Curriculum is the outline of the content of a course of study in relation to the sequencing and the amount of time available for the learning experiences.
Division	This term relates to the organisation of the disciplines delivered by the college in a particular arrangement. It is the equivalent of a faculty in other tertiary level institutions.
Generation X'ers	The generation born after the Western Post–World War II baby boom, generally between the 1960s to the early 1980s.

Licensure Examination	A standardised test that measures the competencies required by entry level nurses in order to perform safely and effectively as a newly licensed nurse.
Polyclinic	This is a public health centre which provides primary health care services for persons in the catchment area where the clinic is located.

CHAPTER 1 INTRODUCTION AND CONTEXT

1.1 Introduction

The study seeks to review the pass and failure rates of cohorts of students taking the Regional Examination for Nurse Registration (RENR) examination over a six year period at the Barbados Community College (BCC). These pass and failure rates will be reviewed in light of the teaching and delivery of the nursing programme at BCC and will be used as a basis for the enhancement or redeveloping of the nursing programme that is offered at BCC.

The focus of this dissertation is to engage the issues that impact the pass and failure rates of the students taking the RENR examination and the challenges of crafting or developing the nursing programme at BCC, so that the programme delivers quality teaching which is reflected in higher pass rates among the students participating in the programme. In the broader context, greater emphasis is placed on the health of the populace of the Caribbean and in particular Barbados where health services are provided free of cost at the point of delivery to the citizens of Barbados.

According to the Health Systems Profile of Barbados 2008 as documented by PAHO, comprehensive health care is provided to all citizens through a network of polyclinics, the QEH, a mental hospital, and long-term facilities for the care of the elderly and persons with disabilities. The Health Services Act Cap. 44 of the Laws of Barbados, gives the Minister of Health the responsibility for the health of the population. Thus the Ministry of Health is the agency responsible for the delivery of health care, the development of policy, and the regulation of the health care sector. The government of Barbados has a vision for a healthy people through empowering individuals, communities, and organizations to pursue health and wellness within a system that seeks to guarantee an equitable provision of quality health care for all people.

Within the scheme of the provision of health care the government has established a network of polyclinics which are strategically located in various catchment areas across the island. These polyclinics offer a wide range of services which include general practitioner and antenatal clinics, dentistry, social workers, and environmental health services, among other

health care related services. In addition to the government services which are offered free to the citizens there is a well-established system of private providers that support the government system. As a result of the extensive health care system in Barbados, there is a need to ensure that there is an adequately trained cadre of nurses, which is supported by the government.

Health care in Barbados is thus primarily funded by the government. The annual expenditure on health care is shown in table 1.0 below, and demonstrates the government's commitment to the provision of health care.

Table 1.0 Annual Governmental Expenditure on Health Care for the period 2007 - 2012

Programme Area	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Direction & Policy Formulation Services	19,586,629	20,354,022	21,753,583	20,273,496	26,649,615
Primary Health Care	27,087,482	28,253,998	28,353,948	28,235,729	27,586,500
Hospital Services	175,777,557	200,437,323	203,019,950	184,657,067	195,015,662
Care of the Disabled	2,772,298	2,858,358	2,981,774	2,884,748	2,805,402
Pharmaceutical Programme (BDS)	51,844,449	55,169,955	58,369,062	52,493,257	29,561,288.53
Care of the Elderly	34,551,434	36,732,633	38,775,622	39,606,406	38,802,446
HIV/AIDS Prevention and Control Project	11,941,297	10,503,480	9,385,117	10,158,666	9,575,181
Environmental Health Services	17647724	17,967,402	18,363,226	17,513,396	17,610,963
Total Expenditure(Bds)	**341,208,870**	**372,277,171**	**381,002,282**	**355,822,765**	**347,607,058**

Source: Barbados Estimates 2007 to 2012.

The Ministry though having full responsibility for all government funded health care institutions took the decision in 2002 to divest the management and administration of the main hospital, the Queen Elizabeth Hospital, to a board of management. This change in management resulted in some changes in the terms of employment of members of staff, resulting in some persons making the decision discontinue their employment with the institution. This decision resulted in many nurses either leaving the hospital and seeking employment in other health care institutions or opting for early retirement.

The change in management resulted in a deficit of approximately two hundred nurses from the hospital. Since the Ministry of Health is responsible for the delivery of health care, it has in place a training policy which is designed to ensure that there is an adequate supply of trained nurses to deliver the quality of care that is required.

The Ministry of Health therefore sought to deal with the impact of the national shortage of nurses by: 1) requesting the Barbados Community College to increase the annual intake of student nurses; 2) amending the regulations of the General Nursing Council to lower the entry age into the nursing programme from 18 years to 16 years; 3) implementing a flexible shift allowance; 4) retaining retired nurses); and 5) as a short term measure, the recruitment of nurses from the Caribbean region, Africa, and South-east Asia. This action of employing a large cadre of contracted nurses was not ideal and brought with it concerns which included cultural and language differences in addition to the increased financial obligations for the hospital due to the recruitment process.

While the request to increase training was necessary, it brought with it some inherent issues such as the poor student to staff ratios, the inability of students to receive adequate clinical supervision and clinical experiences while attached to the hospital, due to the exodus of a large cadre of the more experienced nurses who would have left the QEH. This situation was believed to have had an indirect impact on the performance of the students in the RENR. This situation though unique to Barbados in terms of the reason for the nursing staff deficit, would have occurred in other Caribbean Islands where there was increased migration of nurses. As a consequence there is congruence in terms of the response of countries to the deficits created where most countries sought to increase the training of nurses. Thus the training of nurses and delivery of nursing care is similar throughout the Caribbean region. The following sections will therefore explore nursing education in the Global, Caribbean and Barbadian realities.

1.2 Nursing Education in a Global Context

According to the International Council of Nurses (ICN) (2014), “Nursing encompasses autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings. Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people. Advocacy, promotion of

a safe environment, research, participation in shaping health policy and in patient and health systems management, and education are also key nursing roles".

The history of professional nursing can be traced to Florence Nightingale in England. In 1895 when the Crimean war broke out, Nightingale was appalled that the mortality rate among the soldiers was 41%. According to Pavey (1953), Nightingale was more skilled than most medical personnel and she spearheaded a group of women who travelled to Crimea to care for the wounded soldiers.

In the USA, the outbreak of the civil war formed the beginnings of nursing but at that time there was no formal training or credentialing. The first permanent school of nursing in the USA was established in 1872 in Philadelphia. In response to the acute nursing shortage that followed World War II, an associate degree in nursing (ADN) was initiated on an experimental basis in 1951 to provide a large number of nurses in a relatively short time period. In Barbados, as in most other Caribbean territories, the training of nurses also followed the Nightingale model and was initially hospital based. This training was eventually transferred to the educational institutions and in the case of Barbados to the Barbados Community College (BCC).

The last fifteen years have experienced a great debate in relation to the challenges related to the adequate preparation of nurses for the world of work in a global context (Editorial: Nursing Health Sciences, 2011). This discourse is being fuelled by many factors, among which are, the global shortage of nurses, quality of nurses, quality of nursing education and the advances in medical science and technology. There was a concern with respect to the quality of nurses who entered the profession after training. Bartels (2005, p.222) strongly stated the following with respect to the training of nurses: "We are still teaching nurses to work in settings where they might not be working in the future, preparing them for work they soon might not be doing." The import of this statement is that there must be a clear development of policy that seeks to address quality in primary, secondary and tertiary nursing environments.

The global situation of nurse training is such that many countries which have the training capacity have increased their enrolment of nursing students in an attempt to address the

nursing shortages. However, there are also situations of over production in some countries leading to persons being trained, but there is limited employment available. This situation has occurred in the Philippines, but can be contrasted to the situation in Japan where the life expectancy is high, and there is a shortage of nurses to provide the necessary care to the population (World Health Organisation, 2011).

At the global level, two critical areas in nursing education are benchmarking and quality assurance. There is the need to set high standards for the delivery of nurse training with the objective of achieving a quality output of nurses who can display a high degree of competence that enhances the delivery of nursing care at all levels. Concomitant with this should be the development of quality standards that will govern the delivery of nursing education. These standards should be based on instruments that are crafted to monitor the quality of nursing education, globally, regionally and locally. Additionally there should be a mechanism for the development of policies that will respond to changes in the nursing environment with respect to the delivery of quality nursing care.

This researcher is of the view that it is important for nursing schools to ensure that their students are prepared not only to deliver safe care, but that they are also responsible and responsive practitioners. There is support for this view in the literature, by Bartels (2005) who subscribes to the notion that in order to develop effective nursing practice, due care has to be given to the curricula which underpins nurse training. They concluded that the curricula must take into account, gender issues, leadership, mental health, and aging to mention a few of the areas. While ensuring that the curriculum is relevant, it must also take into account the elements that are required to ensure that the graduates of the nursing programme are prepared for success in the licensure examinations. As a consequence, much attention must be placed on the factors which affect the performance of the students in the licensure examination. Thus this study seeks to identify the factors which affect the performance of the BCC students in the RENR.

1.3 Nursing in the Caribbean Context

The level of training offered to nurses in the Caribbean varies from country to country, and from institution to institution. The training includes a one year Certificate for nursing assistants, three year Associate degrees, Bachelors' degrees, Masters and PhD programmes. The University of the West Indies, Mona campus in Jamaica offers training at all levels; this

can be contrasted to BCC which offers the one-year Certificate, three-year Associate Degree, and one-year Post Associate Degree Diplomas. A large number of schools in the Caribbean still offer the Associate Degree as the primary prerequisite for entry into practice as an RN, couples with success in the RENR. The training of nurses is offered in most Caribbean Community (CARICOM) territories and the graduates of the programmes write the RENR examination for licensure.

The primary function of the RENR, as with all other licensure examinations is to measure the competencies which are required of nurses at the point of entry into practice as a registered nurse (RN). Therefore, a very important outcome for nurse educators is to ensure that their graduates not only have the tools and nursing knowledge to function effectively, but that they are also able to pass the RENR. However, each year, a substantial number of nursing graduates are unable to enter the nursing profession because of failure in the RENR.

All of the schools in the region that are engaged in the RENR follow a delivery mode of concurrent theory and practice as recommended by the nursing blueprint. Given the format of the RENR examinations, schools generally conduct similar types of assessments, which are the objective and subjective type questions. This is in keeping with the four types of papers which make up the RENR examination.

Within the context of the BCC, the success rate in the RENR has consistently fallen below 50% despite recording an average annual graduation rate of 90% for nursing, and this is of paramount concern for all relevant stakeholders. The variation between the RENR pass rate and the graduation rate is of some concern because of the disparity between them. It must be stated that in order for a student to be eligible to write the RENR examination they must have met the BCC graduation requirements, thus one may question whether there is congruence between the BCC nursing curriculum, and preparation for the RENR examination. It is therefore vitally important that nurse educators at the BCC understand more about the predictors of student performance on the RENR examination so that they can identify the students who are at risk of failure, and thereby design strategies and interventions to improve the performance of the students in the RENR.

In the Caribbean prior to the 1940s, nursing education was not as coordinated as it currently is and unfortunately there was little contribution by nurses at the operational level to policy development (Gittens-Scott 2008). There were significant occurrences in nursing development and education in the Caribbean from 1959 to 1983. In 1959 assistance was given by the Pan American Health Organization (PAHO) to improve the standard of nursing in Barbados. The establishment of the Regional Nursing body came into being in 1972 along with the conceptualisation of the RENR; this was achieved with support from the CARICOM Heads of Government and funded through the Canadian International Development Agency (CIDA) (Gittens-Scott 2008). The development of the examination was in response to the need to develop standardised nursing practice across the Caribbean territories, thus resulting in the enhancement of delivery of care for individuals in the Caribbean Community. In 1983 the University of the West Indies, Mona Campus, Jamaica instituted the Bachelor of Science (BSc) in nursing as a means of improving the level of training delivered to students.

It should be noted that the establishment of the examination was in response to the need to develop standard nursing practice across the Caribbean territories thus resulting in the enhancement of delivery of patient care to regionally and internationally accepted standards. Gittens-Scott (2008) remarked that the RENR was a trendsetter for the Caribbean region. Of interest was the fact that even though it was a regional examination, the assessments were administered by each country's individual nursing council rather than by a single body. It is noteworthy that the principle of Caribbean collaboration was a major part of the examination, with each country contributing items for the RENR examination. This saw each country submitting questions for the examination; this process was overseen by a chosen member country each year to ensure quality, consistency and confidentiality.

There were also yearly discussions relative to the development and implementation of the RENR examination. The result of these deliberations was met with approval by the CARICOM Health Ministers, and the first examination was administered in 1990 (Reid 2000). While the examination was intended for all CARICOM countries, it is important to note that not all Caribbean territories which are members of CARICOM subscribed to or facilitated this examination; this situation still exists today. However, with the proposal and subsequent implementation of the CARICOM Single Market and Economy (CSME), the

examination has risen in prominence and enabled the free and seamless movement of nurses who were successful in the RENR to work in the various CARICOM member states.

Proponents, of the implementation of licensure examinations, such as the Regional Nursing Body (RNB), have stated that such examinations would ensure quality of the nursing graduate, whilst opponents raised concerns relative to such processes being poor indicators of the readiness of a student to practise (Wellard et al. 2006). Nonetheless, CARICOM governments recognised that assurances were needed relative to the competencies of the nursing graduates and their ability to deliver quality nursing services, and as such they agreed to a 'final examination' which was implemented to assess the knowledge, skills and competencies of the students. This was also important because it provided a system to ensure that only those persons deemed competent (proficient) were allowed to practise, thus promoting a system of minimum safe entry into the practice of nursing. This was also important for graduates of Caribbean schools of nursing as it provided a mechanism for the movement of nursing graduates across member states to have access to employment opportunities in other countries.

1.4 Nursing Education in Barbados

Barbados was one of the first signatory members to the CARICOM and is therefore legally bound under its rules to be part of any Community initiative. It is important to note that while each member country is individually governed, there are policies which are agreed upon at a regional level. In 2001, CARICOM Heads of Government made a decision which reinforced the importance of healthcare, by collectively stating that "the health of the nation is the wealth of the nation". This principle was also included in the Barbados' Strategic Plan for Health 2002 – 2012 (Ministry of Health, 2003).

In order to ensure the health of a nation, it is imperative that there is quality delivery of healthcare. Consequently it is paramount that each island has a cadre of healthcare professionals, trained by the tertiary institutions throughout the region and beyond, to meet the needs of the country. Additionally, the provision of high quality trained nurses can redound to the economic benefit of the countries in the Caribbean through the provision of skilled nurses who have a greater potential to migrate to countries where there is a nursing

shortage, thus providing foreign exchange for their countries though their financial remittances.

The current structure of the nursing demographic in Barbados in relation to the quantity and categories of nurses deployed in Barbados as recorded by the Nursing Council of Barbados is shown in Table 1.1

Table 1.1 Nursing Enrolments 2014-2015

CATEGORY OF NURSE	NO.REGISTERED
Registered Nurses	977
Midwives	241
Psychiatric Nurses	244
Nursing Assistants	316

The Registered Nurse is the largest category of nurses which are deployed across all health care institutions in both the public and private sector. The categories of Midwives and Psychiatric nurses also function as registered nurses in their specific locations at the Queen Elizabeth Hospital (QEH) and Psychiatric Hospital respectively. The various categories of nurses therefore service a population of approximately 265,000, which appears to be an adequate supply of nurses for a small country like Barbados. However, the question arises concerning the quality of those nurses with respect to the training received and the success in the BCC internal examinations and the external RENR licensure examination. An interesting area of study will be the explanation of how many attempts were made by students in order to pass the RENR and whether there is any correlation to the performance of the students at BCC.

The primary training facility for allied health professionals, the Barbados Community College (BCC) was established by an act of Parliament in 1968 for the delivery of free tertiary education to its citizens. Currently, there are ten (10) Divisions (Faculties)/ Departments at BCC, which cater to a student population of approximately three thousand (3,000) per year; and an average combined graduation rate of approximately 75% across all faculties. The graduation rate for the Associate Degree in nursing at the BCC is above the average rate. For the period 2010 to 2013 the average graduation rate for the Associate Degree in nursing has been approximately 90 percent. Table 1.2 delineates the various allied health training offered at BCC with enrolment and corresponding graduation statistics.

Table 1.2 Enrolment and Graduation Statistics for BCC 2010-2013

PROGRAMME	2010		2011		2012		2013	
	No. of Students	Grad	No. of Students	Grad	No. of Students	Grad	No. of Students	Grad
General Nursing	94	82	75	70	70	66	70	62
Nursing Assistant	37	32	35	31	35	25	35	31
Shortened Registered Nursing	11	10	8	6	11	7	8	7
Psychiatric Nursing	18	16	12	10	21	12	21	14
Midwifery	15	13	15	15	15	15	15	7
Pre-Health Sciences	36	24	29	28	34	19	34	25
Pharmacy	18	13	18	17	26		22	21
Medical Laboratory Technology	8	4	9	8	6	6	-	-
Health Information Management	11	-	-	9	-	2	16	8
Public Health Administration	12	9	12	-	-	-	-	-
Environmental Health	9	9	-	-	-	-	-	-
Community Health Nursing	-	-	-	-	-	-	10	10
Community Mental Health Nursing	-	-	-	-	-	-	6	6
Rehabilitation Therapy Technology	-	-	-	-	-	-	13	13
Gerontological Nursing	-	-	-	-	-	-	15	15

The Division of Health Sciences was established in 1974 by the BCC, to provide training for prospective health care practitioners in Barbados as well as the wider Caribbean region. The Division offers training in a wide range of programmes, including Pharmacy, Medical Laboratory Technology, Rehabilitation Therapy Technology, Health Information Management, Environmental Health Inspection and a variety of nurse training, including General Nursing and speciality nursing programmes such as, Midwifery, Community Health, Gerontology and Psychiatric nursing. For the purpose of this study the general nursing programme will be examined, as this is the programme which provides entry into the nursing profession as a Registered Nurse (RN).

1.5 Biographical and Philosophical Position with Respect to Nursing

This introductory chapter presents an opportunity for this researcher to provide a contextual framework for the importance of this study through the introduction of personal biographical data, and a philosophical position with respect to nursing as delivered at the BCC. It is important that as a researcher, my role in this research process should be clarified. As a senior administrator (Dean) of the Division of Health Sciences from which many of the participants in this study were drawn and the one who conducts their annual performance appraisals, it was expected that there may have been some hesitancy on the part of some staff members to speak frankly. However the ethical issues associated with good research practice were observed and adhered to. According to Kvale (1996), the three main areas of ethical concern in relation to interviews are informed consent, confidentiality, and the consequences of interviews. These matters will be discussed in greater detail in Chapter 3.

My entry into the realm of health care began in 1982 when I was a student in the Division of Science at the BCC. During my second summer, a colleague recommended that I volunteer my time at the QEH laboratory in order to gain exposure to the field of Medical Laboratory Technology (MLT). This experience piqued my interest in the field of MLT; however I did not immediately pursue studies in the field, but instead opted to enrol in a degree in chemistry in Jamaica. One year after completing that degree, and having spent nine months in the laboratory, I decided to travel to the USA to pursue a degree in MLT.

Upon completion of the degree in MLT, and after gaining licensure to practise in the USA, I returned to Barbados and began work in the laboratory. While working there, a vacancy for a tutor in MLT at the BCC was advertised; I applied and was successful in being employed by BCC as the head of the MLT department in 1990. This opportunity, though not in my plans, allowed me to acquire exposure in the field of MLT through my involvement in several activities organised locally and regionally by the CARICOM secretariat and PAHO.

When I initially entered the BCC as a tutor I followed a behaviouristic pedagogical model where at that stage I was of the belief that I was the repository of knowledge and assumed an active and directive role in the classroom. With passing time I was forced to change my approach to teaching and learning, recognising that students had almost equal access to the same knowledge. This new realisation changed the way I viewed my role as a teacher, and I

became a proponent of the philosophy of constructivism. It should be noted that individuals differ in their experience of external reality which is based on their own unique experiences with the world and their beliefs about the world. Chambers et al. (2013) noted the following:

> *As such constructivism is not a specific pedagogy but a philosophy which states that learning is an active process of creating meaning from different experiences. In other words, students learn best by trying to make sense of something on their own with the teacher as a guide.*

Given my expanding and developing roles in the field of health education, and cognisant of the demographics of the students in the Division of Health Sciences, I decided to enrol in a Master of Science degree in Adult Education and Training at the University of Surrey, England. This training presented further opportunities for me to assess my role as an educator, recognising that adult learners approach knowledge acquisition quite differently from younger learners, and that they were willing to take greater responsibility for their learning. Upon completion of the Master's degree, I enrolled in this doctoral programme at the University of Bath as a means of furthering my academic journey, and preparing myself for a greater administrative role in the BCC, especially within the Division of Health Sciences.

In 2006, another opportunity presented itself for me to further expand my experiences in education and health care and I became heavily involved in the quality management movement that was sweeping the Caribbean in relation to the development of quality management systems for the laboratories in twenty four countries under the umbrella of CARICOM/CARIFORUM. My deep interest in quality improvements led to my appointment as a Quality Management Implementation Training Specialist with CARICOM for a period of nine months, where I travelled to 24 countries in the Caribbean region giving assistance to the laboratories that were in the process of preparing themselves for International Standards Organization (ISO) accreditation. During this period, I grasped every opportunity to learn as much as possible about quality management, quality improvement initiatives, accreditation, and how these activities could be applied in educational institutions.

The return to my substantive post as Head of Health Sciences provided an opportunity for me to seek avenues to apply some of the vast knowledge, experience and competencies in the area of quality management to the improvement of the various programmes offered by BCC. The programme of study which receives the greatest attention of all allied health professions is the nursing programme; it is responsible for producing the largest number of health care

professionals in Barbados. The prominence of the nursing programme has elicited many inquiries from persons and organisations in regard to the performance of the students in the RENR, and each year there were statements emanating from administrators of BCC, personnel from the Ministry of Health, Ministry of Education, the Nursing Council of Barbados, and the general public about the varied performance of the nursing students in the RENR; this led to indirect questions about the quality of nurse training delivered by the BCC.

This discourse on performance of nursing students on the RENR has therefore led me to develop this study which is aimed at evaluating the performance of the BCC student nurses in the RENR and to determine the factors which have the potential to affect the performance of the students in the RENR. Additionally, this study is seeking to offer recommendations for the improved quality of the nursing programme, its delivery, and student outcomes. While it must be recorded that I am not a nurse, my involvement in the nursing profession is extensive. Firstly, I supervise a staff of twenty nursing faculty at the BCC, I am a member of the Nursing Council of Barbados, as well as a member of the Nursing Staff Committee of the QEH. These activities over the past ten years and the daily management of the nursing department have therefore placed me in a strategic position to explore this study, and to make recommendations for quality improvements in the nursing department.

I am therefore convinced that pursuance of this doctoral programme will lead to my professional development and add quality to the work that I engage in daily. Furthermore, it will provide additional opportunities to be involved in the development of the nursing profession nationally and regionally.

1.6 Statement of the Problem

The engagement of the literature review in preparation for this study has revealed that a number of persons have been undertaking research on the performance of students in various licensure examinations, as well as the factors which affect the performance of students in their studies in various nursing programmes, and their ultimate success in the licensure examinations. While there is a body of information and studies on this topic within the context of the international arena, there is a paucity of published studies which deal with this topic within a Barbadian and Caribbean context.

Within the context of the Caribbean, there is some published data relating to the evaluation of the initial performance of students in the RENR. This study was done by Reid (2000), who conducted the evaluation of the first RENR examination and this revealed that while some of the schools produced poor results; she surmised that no single factor was responsible. Reid (2000) further posited that this may be due to a combination of the following major factors including the non-integrated approach to the delivery of the curriculum, poor quality classroom teaching, poor quality clinical supervision, and monitoring and evaluation of students in the clinical area, as well as the poor knowledge base of students.

Additionally, this research should identify possible reasons for the candidates' performance, and these factors will be compared with those posited by Reid (2000), to ascertain whether they are still the same, whether there are additional factors or whether there are significant differences in the factors identified then, and the ones uncovered in this study.

Barbados is one country amongst many that heavily subsidises the economic cost of education at the point of delivery for its citizens at the primary, secondary and tertiary level. Due to the significant annual expenditure on education, the Ministry of Finance is interested in the return on investment for education, while the Ministry of Education is interested in the output, with regards to both quality and quantity of the nursing graduates from the BCC who are eligible to practise as registered nurses upon completion of their studies. In turn BCC wants to ensure that its programmes are up to the established bench-marked standards locally, regionally and internationally. The BCC is therefore seeking to determine the effectiveness of the nursing programme with respect to standards and pedagogy.

It should be noted that in Barbados, the hallmark of success is based on the pass rate of graduates in the Regional Examination for Nurse Registration (RENR), which is the licensure examination for eligibility to practise as a registered nurse in Barbados. This study therefore provides an opportunity to interrogate at least one aspect of the above mentioned areas, namely student success and the factors influencing that success. The main focus therefore will be to find answers to the following problem:

What are the factors which contribute to student performance in the Regional Examination for Nurse Registration (RENR) among nursing students in the BCC nursing programme?

The supporting questions are as follows:

1. *What were the students'/graduates' perceptions of the factors which affect their success in the RENR?*
2. *To what extent do the GPA scores predict student success in the RENR?*
3. *Is there a relationship between the age and gender demographics and the performance of the students on the RENR?*
4. *Which of the four RENR examination papers do students experience the greatest difficulty?*

1.7 Importance of the Study

This study was undertaken for several reasons. Firstly, it was conducted to add to the information and research studies in relation to the performance of students in the RENR licensure examination. Secondly, it was designed to respond to concerns raised in relation to the performance of the BCC students in the RENR using evidence-based research data. Another vitally important reason for this study is that it will provide valuable information in relation to the performance of students in other licensure examinations, thus allowing for a comparison in relation to the performance of BCC students in their licensure examination. Given the interest of the Ministry of Education in the outputs of the nursing programme, the interest of the Ministry of Finance on the return on its investment in education and training, and the interest of the Ministry of Health with regards to quality nursing staff, it was expected that this study would provide an opportunity for the further development of educational policies and funding, accepting that policy should be research driven and should be based on empirical data.

Hamersley (2002) cites the importance of the impact of policy on practice and notes that the output of educational research, whether qualitative or quantitative, should impact positively on policy development in education. If there is to be constant refining of the nursing programme at BCC, then there must be a consistent flow of information at the research level detailing the performance of the BCC programme and providing information that can be used to inform the development of new policies.

This study is also important to Barbados as a small island developing state which is seeking to obtain the status of a developed nation by 2025. The country is ranked at 38 out of 179 on the United Nations development index as of June 21, 2013.[1] The government of Barbados is seeking to achieve the status of a developed nation and is therefore in the process of planning in all sectors of government to meet this goal. This study therefore provided an opportunity to explore an area of education that is important to health and its continued development.

In the Barbados National Strategic Plan, 2005 – 2025(NSP)[2], the national development objectives seek to maintain access to quality education, health care and sanitation. Some of the successes of the government of Barbados include free education at the primary and secondary levels, and subsidised at the tertiary level, access to publicly-funded health care system, and free pharmaceuticals, including antiretroviral treatment for HIV/AIDS. To ensure access to quality health care, it is therefore pivotal that the health care system has full access to highly trained, competent nursing personnel. Thus it is vitally important that BCC seeks to provide adequate training to meet the needs of the health care institutions in Barbados.

1.8 Organisation of the Study

The organisation and the conduct of the research are critical to the success of the study. Table 1.3 outlines the timetable for this study.

Table 1.3 Organisation of the Study

PHASES	DATES	DETAILS
Phase I	March 2011 to November 2011	Literature review, development of questionnaires, and interview schedule.
Phase II	February 2012 to July 2012	Conduct questionnaires, interviews and student focus group.
Phase III	August 2012 to December 2012	Transcription of interviews and focus group, and enter questionnaire data into SPSS
Phase IV	February 2012 to November 2012	Preliminary evaluation of SPSS data and coding of qualitative data
Phase V	January 2013 to July 2015	Final analysis of research data and writing of dissertation

[1] Source http://www.caribjournal.com/2013/06/barbados-continues-to-lead-in-human-development-index

[2] Source http://www.sice.oas.org/ctyindex/BRB/Plan 2005-2025.pdf

This thesis will comprise five chapters. **Chapter 1** will give an introduction to the study, brief biographical data on the researcher, the problem statement, the underpinning theory for the study, the importance of the study and a brief statement on the methodology employed. **Chapter 2** will present the literature review that supports the study and explore the factors that affect student performance and achievements in licensure examinations. This chapter examines the historical data in relation to nursing education globally, regionally, and locally, and provides theoretical support for the study and its methodology and data in terms of the performance of other students in similar licensure examinations. **Chapter 3** outlines the methodology and procedures employed in the study. **Chapter 4** presents the research findings of the qualitative and quantitative data generated through the questionnaires, interviews and the student focus group and presents the answers to the research questions. The final **Chapter** contains the conclusions and presents the recommendations as supported by the findings, to improve the operations of the nursing department with a resultant improved performance of the BCC nursing students in the RENR examination.

CHAPTER 2 LITERAURE REVIEW

2.1 Introduction

Neumann (2006) succinctly explained the goals of a literature review when he stated that the goals are to: "*demonstrate a familiarity with a body of knowledge and establish credibility; to show the path of prior research and how the current project is linked to it; to integrate and summarise what is known in an area; and to learn from others and stimulate new ideas*". He also acknowledged that the literature review should be grounded in the supposition that all knowledge accumulates and that people learn from and build on what others have done. It is also critical that each research project is clearly supported by a strong philosophy, a clear ontology, and relevant epistemology and theory. The literature review of this study is thus intended to achieve the aforementioned goals.

Whilst, Chapter 1 discussed the background and context for the study, this chapter will review and discuss the discourse in the literature relating to constructivism, the quality of nursing, the RENR, student demographics, current trends in nursing education, predictors of performance on licensure examinations and other associated topics. These topics will be analysed in order to provide the ontological, epistemological and theoretical support for this study. This chapter will also examine the literature relevant to the study, with emphasis on research that explored the factors that may have impacted the performance of students in licensure examinations. This information will be compared with the data generated by this study which examined the factors which contributed to the student success in the RENR for nursing students in the BCC nursing programme.

2.2 Constructivist Theory in Literature

The changing needs of health care have created a situation whereby nursing programmes are required to adjust their training methodologies in order to produce graduates who are able to fit into the new health care environment. Using the constructivism theory, where learning is viewed as an active process by which learners create new ideas or concepts based upon their present-day or past knowledge, will require leaders in nursing education to make a paradigm shift toward instituting a concept-based curricula, in order to meet the required needs. Within

the context of this study constructivism is being discussed in relation to the training of nurses and thus influenced the development of some of the questions included in the questionnaires and the interviews, as a means of determining the possible effects such an approach may have on the performance of the students in the RENR.

Constructivism is a theory of learning that is rooted in both philosophy and psychology. The essential core of constructivism is that learners are encouraged to actively construct their own knowledge and meaning from their experiences (Fosnot, 1996; Steffe & Gale, 1995). This core has roots that extend over many years and supported by many philosophers, including Dewey, Hegel, Kant, and Vico.

Therefore, the role of the educator in constructivism is pivotal to understanding how this theory impacts learning. Von Glasersfeld (1984, 1990) proposed three essential epistemological tenets of constructivism. The first of these is that "*knowledge is not passively accumulated, but rather, is the result of active cognising by the individual*"; the second tenet expresses the idea that "*cognition is an adaptive process that functions to make an individual's behaviour more viable given a particular environment"*; and finally, "*cognition organises and makes sense of one's experience, and is not a process to render an accurate representation of reality"*.

The implication of constructivism for the training of nurses is that it requires much thought and hence structured planning with regards to the role the individual student plays, in relation to their understanding, and achievement of the various nursing skills and competencies. Hoke and Robbins (2005) supports the view that educators must not minimise the role the student plays in his/her learning, and further states that faculty must move away from the traditional curriculum and include innovative teaching strategies to encourage the students to take responsibility for their own learning whilst at the same time creating an atmosphere of reduced anxiety.

In support of the above position, the National League for Nursing's (2007) Excellence in Nursing Model can be used to help nursing educators redesign their curricula to reduce the amount of content, and utilise more active-learning strategies in the student learning

activities. This model has as one of its core elements the student at the center of all activities which are innovative, interactive, and correlates with the practice of constructivism.

2.2.1 Constructivism and Adult Learning

Knowles et al. (1998) posited that the theory of adult learning is called andragogy, and that there are six principles of andragogy for adults. The first principle is the learners need to know: "*how learning will be conducted, what learning will occur, and why learning is important*" (Knowles et al., 1998, 133). The second principle, *self-directed learning,* is the ability to take control of the techniques and of the purpose of learning. This is followed by the prior *experience* of the learner which impacts learning in creating individual differences, providing rich resources, creating biases and providing adults' self-identity. The fourth principle is *readiness to learn*. Adults become ready to learn when their life situations create a need to learn. The fifth principle is *orientation to learning.*

In general, adults prefer a problem-solving orientation to learning and they learn best when knowledge is presented in a real-life context. Finally the sixth principle is *motivation to learn.* Adults have a high motivation to learn when the learner can gain the new knowledge to help them solve important problems in their lives. Knowles et al (1998) commented that adult learning fall within the ambit of a constructivist approach given that learners are making meaning from their learning experience. As a consequence, the constructivist classroom should expose students to problem-solving, inquiry, the use of case studies and the use of technology.

At BCC, tutors use case studies, which are intended to develop problem-solving skills in the students; however, this process is still heavily directed by the tutor and does not allow for enough self-directed learning as is required in a constructivist setting. This state of affairs has the potential to impact negatively with respect to the outcomes of the RENR. Nonetheless, as students explore a given topic or concept within the constructivist classroom, they are able to draw conclusions, and, as exploration continues, they are afforded the opportunity to revisit these conclusions and make adjustments as necessary.

At BCC, there is a practice of concurrency of teaching where the delivery of the theoretical courses is usually accompanied by the practical aspects in the skills laboratory, and then followed by the student being given the opportunity to demonstrate their skills in a clinical setting under supervision. In the skills laboratory the students are given the opportunity to practice their skills until a level of competence has been achieved. The constructivist approach is also suited to a combination of individual and team work, where according to Vygotsky students can learn from a *more capable other*, that is, one who has prior experience with the topic being explored or the problem being solved Rutherford (2012).

In the BCC programme students are usually assigned to the clinical area in small groups where they are able to engage in cooperative learning and collaborate with each other. When the students are assigned to their various clinical locations, students who worked in the field of nursing prior to their enrollment in the nursing programme are generally encouraged to assist the other students without prior experience, thus sharing their previous experiences with their colleagues, while honing their individual skills.

Candela, (2006), postulated that the application of constructivism in the nursing curricula provides the opportunity for the development of clinical interventions based on planning and assessment and critical thinking, this is in contrast to the more widely used content laden curricula. Candela, 2006, further suggested that constructivism also aids in the training and education of nurses by providing a mechanism for the development of critical thinking skills, thus encouraging the adaptation to changes due to evidence-based practice. Candela (2006) also suggested that the development of the ability of the student to gather information and to critically analyse that information was the most appropriate way to produce nurse graduates with the necessary critical thinking skills.

Therefore, when engaged in classroom activities that employ a constructivist framework, the focus should shift from the teacher to the students. In this setting the teacher is no longer the expert who pours knowledge into passive students, who may be considered empty vessels waiting to receive the knowledge dispensed by the teacher. Instead, in the constructivist model, the students must be encouraged to be actively involved in their own learning. Within the BCC programme, final year students are required to prepare a management portfolio, where they are required to document their experiences in managing a small number of

patients, as well as determining how the staff on the unit should be utilized. Even though this activity is under the supervision of the unit manager, they are given the opportunity to develop their critical thinking skills and abilities since they are required to justify all their actions, and document them in their portfolio.

Splitter (2009) also supported the idea that students are active participants in the learning process, rather than passive recipients of knowledge that has been accumulated by others and transmitted to them. Splitter (2009) argued that there should be separation between constructivism and social constructionism and he further stated that:

> *"Thus characterized, constructivism is silent on the ontological status of what is thereby constructed. It is, fundamentally, concerned with making sense of our experience, i.e. with "meaning-making".*

Splitter (2009) further posited,

> *By contrast, social constructionism, as I am construing it here, maintains that not only knowledge, but truth, reality, facts, texts, even ourselves, are social constructs, and that learning (knowing, meaning-making) does not depend upon any kind of fixed correspondence with the "real world" out there, either because there is no such reality or because, a la Kant, it is an unknowable world of noumena which cannot figure in any account of knowledge. Thus characterised, social constructionism is a rejection of objectivism and foundationalism*.

Brandon and All (2010) also supported the use of constructivism in the nursing curriculum in both the theoretical and clinical settings. They believed that students should be taught concepts rather than primarily content as was typical in many nursing schools since training historically consisted primarily of lectures where the students were the passive recipients of information. This situation does not exist at BCC because the clinical aspects of the programme outweigh the theoretical aspects. The programme is therefore structured in that manner as one of the primary aims of the programme is to produce competent graduates who are fit for practice.

2.2.2 Critics' Views on Constructivism

Brandon and All (2010) stated that while it has been acknowledged that constructivism has a place in the development and delivery of the nursing curriculum, there were some challenges to this philosophy. Brandon and All (2010) believed that while the educational model, which used constructivism, was based on rigorous academic standards, the educator should be capable of equipping and developing students who were independent learners. This model of education transforms students from passive learners to active participants where the educator is no longer the locus of control.

However, while this researcher supports the position that constructivism plays a pivotal role in the development of nurses who have the ability to critically think and analyse, the Educational Broadcasting Corporation (EBC, 2004) suggested that the behaviouristic curriculum design requires the students to acquire specific objectives in contrast to the constructivist curriculum where the curriculum is negotiated with the students, based on their needs.

However opponents of this change in the curriculum to a constructivist approach may say that constructivism diminishes the leadership of faculty but this could not be further from the truth. Nurse educators will be in a primary position to lead as coaches and facilitators, developing innovative teaching methods and producing stronger nursing students in nursing courses according to Brandon and All (2010).

Fox (2001) observed that in its emphasis on learners' active participation, it is often seen that constructivism too easily dismisses the roles of passive perception, memorisation, and all the mechanical learning methodologies in traditional didactic teaching. Researchers Biggs, (1998); Jin and Cortazzi, (1998) have noted that while constructivist approaches may be used to transfer information to the students, including one-to-one or small group interaction, such as in nursing where the teaching of 'clinicals' is usually done in small groups which allow for greater teacher/student interaction but they do not always guarantee the effectiveness of the teaching. A case in point as stated by Biggs, (1998); Jin and Cortazzi, (1998), is where the traditional didactic lecturing of large classes of 50 to 70 students in China did not always

mean doom and gloom for the efforts of the teacher. Thus, there is some oscillation between the behaviourists and the constructivists, but Brandon and All (2010) is of the view that we may have to look at a single theoretical paradigm of dualism. This is the view of opponents to the writings of Vygotsky and his guiding monist philosophy.

The constructivism approach is therefore appropriate for the delivery of the nursing curriculum; even though there are persons who are not convinced that this is the best approach. Terhart (2003) contends that constructivism does not present a new didactic paradigm which is different from traditional educational theories. Although successful in the teaching of clinical courses, constructivism does not introduce a shift from the traditional dualist framework of thinking. It should however be noted that constructivism in education is not without risks, and must take into account that allowing students to take responsibility for their own learning and constructing their own realities must be in a context that does not compromise patient safety. Another risk associated with constructivism is the reality that the teacher is no longer the sage on the stage, and that students must be allowed to take greater responsibility for their learning which will also lead to them making mistakes. However, students must not be demoralized because they have made errors, but the teachers must be able to give the students assurance and help them to build their confidence. Thus in the BCC programme, great care is taken to ensure that students are supervised at all times when on clinical assignments, and that staff are available to students even when mistakes are made.

2.3 Components of Constructivism in Nursing Education

Jonassen, 1999, pp. 8-10, has advanced the concept that in constructivism, learning must be meaningful, and can be defined as active, intentional, cooperative, constructive, and authentic. These elements have been further supported by Greenawalt J, and Brzycki D, 2009, where they examined the elements of constructivism in nursing education.
Active learning implies that the students are able to interact with the environment, through the manipulation and observation, followed by interpretation of the results (Jonassen et al, 1999, p. 8). In the BCC programme the students are taught skills in the laboratory where the instructor demonstrates the particular skills, and then allows the students to perform a return demonstration on their classmates and mannequins until they are able to demonstrate competence in that particular skill. This is followed by the students being given the

opportunity to perform real tasks in the hospital or clinical setting, and they receive feedback from their clinical instructors and preceptors. Greenawalt J, and Brzycki D, 2009, have stated that active learning is very important to nursing students, since most of them tend to be kinesthetic learners that will function best in an active learning environment.

The second element is constructive learning, which is considered to be meaningful learning, where students learn from an activity when it is combined with reflection. In the BCC programme prior to their clinical assignments they are engaged in a pre-clinical conference which sets the framework for what is expected of them when on clinical attachments. This is also accompanied by a post-clinical conference where the students are allowed a period of reflection on their experiences, and they are allowed to ask questions of their clinical instructors and the nurses on the units.

The third element is intentional learning. This occurs when students articulate and pursue a cognitive goal of their choosing. According to Jonassen, 1999 they learn more because their activity is goal-directed. This criterion for meaningful learning is problematic in nursing education at BCC since students are not allowed to choose their experiences. This is due to the fact that the programme is prescriptive and is guided by the standards set by the Nursing Council of Barbados, and the guidelines for the RENR examination.

In authentic learning, the forth element, the constructivists have noted that faculty tends to oversimplify ideas and concepts in order to transmit them easily. However when students learn procedures without contextual information, they may be unable to apply these concepts to real situations or new contexts (Jonassen et al, 1999, p. 9). Thus, knowledge and skills should be taught in real-life contexts and practiced in a variety of contexts. According to Parker and Myrick, 2009, complex problems must be presented to develop higher order thinking in students. In the apprenticeship model of nursing education the student was fully immersed in the hospital environment where their learning experiences were real and complex. However in the In the university and BCC model, students spent less time in the hospital setting, but this is accompanied by simulation laboratory sessions where even with limited resources, students are able to develop their psychomotor skills.

Cooperative learning is generally collaborative where the students work in groups so that they can use each other's skills to help in solving problems, and in learning different ways of finding solutions (Jonassen et al, 1999, p. 10). Cooperative learning may occur in various models. One such model is the apprenticeship model where students help each other. Another model is the university based model where independent learning and competitiveness may be emphasised. In this model the students are assigned in small groups and while they offer assistance to each other, they are less tight than in the apprenticeship model. The third model is the contemporary model, where students are assigned in smaller groups both in clinicals and the skills labs. At BCC students practice their skills individually or in pairs, and scenarios are structured to develop teamwork and communication among the students.

2.4 Impact of Learning Styles **(THIS SECTION IS NOT NEW, IT WAS REPOSITIONED)**

The learning style of an individual plays an important role in their ability to assimilate what has been taught and there are more than 70 published models on learning styles. Coffield et al. (2004) have stated that these published models in relation to learning styles often have self-contradictory assumptions about learning, different research and instructional designs, and different starting points. In addition to this, Riding & Rayner (1998) also argued that the models had variable dimensions and characteristics, including the cognitive processes, personality descriptions, talents, sensory modalities, learning processes and thinking styles, but they generally assumed that all persons may learn, though in different ways and at different levels.

Given the context of this study which seeks to determine the factors which affect the performance of the nursing students in the RENR, there is a need for research on the learning style preferences in nursing students. There are a few studies on learning styles, the majority of which originated from the United States, and they have reported a significant increase in achievement in the profession, when students have studied with strategies congruent to their learning style preferences (Dunn & Griggs, 1998; 2007). One example of this was observed with anesthesiology students who, being aware of their learning styles, showed less anxiety, and improved clinical performance compared to those who were not (Garcia-Otero & Teddlie 1992).

Ingham (1991) found that with the Productivity Environmental Preference Survey (PEPS) instrument, 40 percent of college students who were studying health care were visual learners compared with less than 25 percent who were auditory learners. Furthermore, Billings & Cobb (1992) stated that interactive instructions, as well as individual motivation and responsibility, correlated positively with students' grades.

When learning styles instruments were used they yielded outcomes which were specific for that particular model. However, Fleming's (1995) VARK test: *visual, aural, reading/writing, and kinesthetic sensory modalities,* determined the specific ways the students receive information.

According to James et al. (2011) and Meehan-Andrews (2009) results from the VARK test have identified that the majority of first-year nursing students were kinesthetic. This means that they learned as a result of doing and they highlighted that the lectures and tutorials were useful for their learning (James et al., 2011). The same study also reported that rural nursing students had significantly higher visual and kinesthetic scores, and higher visual and read-write scores compared to metropolitan students (James et al., 2011). Additionally, research teams found that nursing students' learning style profiles can change between two measurement points (Fleming, McKee, & Huntley-Moore, 2011), and further changed the longer students remain in school, and continues to change as they grow older (Dunn & Griggs, 1995).

This exploration of the learning styles of students would be especially useful, as an assessment of student preparation prior to and post the RENR. Since learning styles play a pivotal role in the ability of the student to grasp fundamental concepts; it is believed that a student's style of learning also has profound implications for planning professional education, measuring educational outcomes and anticipating an individual's ability to fulfill functions associated with the profession (Underwood 1987).

The underpinning of the Witkin's style of learning is that of cognitive processing where Witkin described the process as a bipolar continuum which indicates the extent of perception a person experiences as a part of a field being discrete from the surrounding whole. Thus as a result of Watkin's work, nurse educators have recommended various learning styles in nurse education (Noble et al. 2008).

Claxton and Ralston cited in Underwood, (1987) examined the cognitive style of learning and noted that students with the dependent learner style would demonstrate greater academic success, if feedback was provided and if taught in environments which reflected social approval. Independent learners were seemingly less influenced by feedback such as grades and evaluations, and appeared most motivated and successful in challenging group situations.

2.5 Impact of Pedagogy (THIS SECTION IS NOT NEW, IT WAS REPOSITIONED)

Nursing education was traditionally conducted through an apprenticeship system in a clinical setting, but was subsequently transferred to a holistic model within the college setting. The dynamic nature of healthcare and its attendant changes in technology have dictated the need for continuous curricula changes. The recent developments in adult education and research have also strongly influenced the need to change nursing education in order to produce nurses for the future who are skilled enough to provide safe, effective care based on the individual client needs and their circumstances.

Therefore the mission, values, and curricula of a nursing programme should reflect a plan that promotes learning as being student-centered. However, the revolution of nursing pedagogy involves a transformational process from the traditional conservative model of instruction where the student is the passive recipient of information to a new model where the student becomes engaged in the process of developing autonomy, empowerment and self-learning. In order to meet these requirements for the future generation of nurses, nurse leaders and educators will need to create a paradigm shift in nursing pedagogy to ensure that there is student centered learning.

The teaching of adults is often times based on the principles of andragogy, while the teaching of children follows a pedagogical approach. Pedagogy has been defined by Ironside (2003) as the educational or instructional approach used to develop knowledge which can occur in many different settings.

While the methodologies are generally applied to teaching of either group on a whole, there are documented differences based on gender, grades, and culture. In a survey of 374 college/university students, Bale & Dudney (2000) noted that females had a greater preference for active, participative learning and preferred their learning environments to be

adapted to their learning needs; which were not of concern for males. Students who were working also preferred a more active learning environment especially when they were permanently employed. Students in the study who had lower grade point averages preferred a more didactic environment and they were dependent on the teacher for direction. Bale & Dudney (ibid) concluded that Generation X'ers could be better served from a methodological standpoint if the instructors employed adaptive problem centred teaching methods that had meaning to the learner. The implication therefore is that these learners needed to have clear directions for example through the use of comprehensive syllabi, internships and case studies, simulation and group assignments.

In the constructivist pedagogy, there is a link between theory and practice, which suffers from the breadth of its theoretical underpinnings. Theorists and practitioners such as Brooks & Brooks (1993); Driscoll (1994) and Jonassen (1991) have generated constructivist pedagogies with a range of results. While these pedagogies have some common core design principles, the outlying principles tend to vary greatly. The general theoretical and practical constructivist consensus, across all three types of constructivism, indicates that eight factors are essential in constructivist pedagogy (Brooks & Brooks, 1993; Larochelle, Bednarz, & Garrison, 1998 and Steffe & Gale, 1995). It should be noted, that these principles are not solely constructivist in nature, and all of these principles have been proposed by other theories/theorists at various times.

Table 2.1 Essential Factors in Constructivist Pedagogy Adapted From Brooks & Brooks (1993)

Learning should take place in authentic and real-world environments.
Learning should involve social negotiation and mediation.
Content and skills should be made relevant to the learner.
Content and skills should be understood within the framework of the learner's prior knowledge.
Students should be assessed formatively, serving to inform future learning experiences.
Students should be encouraged to become self-regulatory, self-mediated, and self-aware.
Teachers serve primarily as guides and facilitators of learning, not instructors.
Teachers should provide for and encourage multiple perspectives and representations of content.

The ever evolving needs of health care have required a change in how nurses are educated. Nurses are now required to care for sicker, older adults and patients with a wide range of chronic illnesses and this requires them to be better prepared to deliver appropriate care. Consequently, the nurse educator is required to be better prepared to deliver nursing education in a more appropriate manner to ensure that the graduate nurse is prepared to deliver the level of care required. Therefore the essential factors as listed in Table 2.1 are applicable to the training of nurses especially where the constructivist pedagogy is used.

Segers et al. (2001) have stated that if nursing education is to truly prepare nurses to function in this environment then the aim of nurse education has to change from "learning what is known" towards "educating for the unknown future". Chambers (2007) is of the view that there is a definite need for the adoption of pedagogical approaches that engender the cognitive, meta-cognitive and social competencies that are demanded by the changing educational and health care environment, in order to ensure that nurses upon graduation are 'fit for purpose'. It is often assumed by most persons that the students are "blank slates" who are submissive, have very little experience to draw on, their motivation is extrinsic and not intrinsic, and their learning is contingent on acquiring specific content and skills. This is certainly not true in the constructivist paradigm.

The pedagogical approaches outlined above provide an insight into the appropriate methodologies that can be considered and utilised in the delivery of the nursing curriculum. The utilisation of some of these techniques may be used as a means of improving the teaching and learning activities of the faculty and students, thus resulting in an improved performance of the students in the RENR.

2.6 Quality in Adult Education

The global shortage in the nursing workforce as alluded to by Dr. Chan, Director-General of the World Health Organization (WHO 2010) and the increased training of nurses necessitates that emphasis should be placed on the quality of training delivered by the various training institutions and not only on the approaches to teaching. However, within the context of higher education it is important to define the term quality. Harvey and Knight (1996) identify quality by looking at its attributes. They stated that quality is exceptional, which is

demonstrated through exceptionally high standards of academic achievements; quality is perfection, and is related to zero defects; quality is "fitness for purpose" that is, it meets the expectations of the customer. Quality, according to Harvey and Knight (1996), is value for money, and it is transformational.

Bogue (1998) highlighted three perspectives on quality which are common to higher education institutions. These perspectives are; limited supply, quality within mission, which is defined as "fitness for purpose", and it is value-added or quality in results. This third perspective is defined by Astin (1985, cited in Bogue, 1998, p. 9) as the impact "on the student's knowledge and personal development and on the faculty member's scholarly and pedagogical ability and productivity".

The changing environment in which educational institutions function, the professional perceptions of the graduate and expectations of the employer have dictated the development of the 'quality institution'. This concept, as supported by Freed et al. (1997) forms the driving force for many institutions, giving special attention to their operations of which quality is the focal point. Thus the changing environment has provided the impetus from which tertiary institutions can evaluate and enhance their quality framework, or move swiftly to establish the appropriate framework, as well as develop a culture of quality assurance within the institution.

While the development of a quality framework may appear feasible, Blumenthal and Epstein (1996) suggested that there was little evidence to support the effects of quality improvements on the quality of care. Additionally there was still scepticism relative to the impact of the benefits of practising quality improvement, on student performance.

Additionally, El-Khawas, et al. (1998) posited that over the last twenty years a new paradigm in the function of higher education has emerged; learning institutions were not now only to provide knowledge, but also qualified quality manpower and the production of knowledge through research. This process has therefore necessitated the development of new criteria to assess the success of an institution in the provision of the needs of the society, as this was no longer measured simply by the pass rate or number of graduating students.

In recent years, this assessment was undertaken through the application of value-added criteria which examined the before and after scenarios such as the base-line testing of new students relative to their strengths and weaknesses and their progress through the institution (Astin, 1991). One example of a new approach is the College and Work Readiness Assessment (CWRA+) which was developed by the Council for Financial Aid to Education. This measures the institutions' contribution to the students' level of critical thinking, analytic reasoning, problem solving, and written communication ability (Gulla and Jorgenson, 2014). This implies that the success of an institution is determined by the success of its students and the quality of their experience.

In Barbados, the hallmark of success of the nursing programme is still based on graduation rates and more specifically the pass rate in the RENR. This perception of quality by administrators and personnel from the Ministry of Health and the Ministry of Education does not include attrition rates or other supporting factors, and has led to extensive discussions in public forums, on the quality of training being delivered and by extension the graduates produced, not only by BCC but throughout the Caribbean.

Consequently, it was imperative that this assertion be examined and based on the findings; new criteria for assessing quality be advanced. The development of new criteria for the assessment of quality can lead to the development of a new vision for the operations of the Nursing Department, not only to ensure that the nurses have satisfied the required outcomes as outlined by the curriculum, but that the performance of the students in the RENR is systematically improved.

It is also important that standards in nursing education be created, implemented and maintained, whether locally, regionally or globally. According to WHO (2009), if global standards are implemented they should ensure that educational criteria and expected outcomes are established which are based on evidence and competency, with emphasis on lifelong learning. There should also be the assurance of employment for practitioners who are competent, and who are capable of providing quality care, and thus can promote positive health outcomes for the populations they serve. In the United States of America and the United Kingdom, the regulatory bodies have also identified the need for improvement in skills training as well as methods to maintain and update the competencies of nurses once

they enter the practice environment, which re-emphasises the need to ensure "fitness of purpose" of nurses achieving registration (Williams and West, 2012).

The tenets of this study take into account the influences of relevant stakeholders, such as the final year students, faculty, and graduates of the BCC programme who would have taken the RENR examination, and who would be in a position to share their experiences retrospectively. Their contribution will hence be valuable in establishing whether the necessary quality standards were operational within the nursing curriculum. Furthermore, the data generated will be evaluated to determine whether there could be an increased level of quality within the Nursing Department, which can then be translated into the delivery of quality care by graduates in the clinical setting and an increased RENR pass rate. While this study seeks to answer the question: "**What are the factors which contribute to the student performance in the Regional Examination for Nurse Registration (RENR) among nursing students in the BCC nursing programme",** consideration has also been given to any observations which can be employed within the Nursing Department as a means of improving the quality of delivery of the educational programme and its resultant output through the graduates' performance in the RENR examination and their ability to be 'fit for purpose'.

Biggs (1993) posited that education is a complex system made up of three variables which interact with each other. These variables are 'Presage', "Process' and 'Product' which when well integrated will produce quality products. Presage is associated with those variables which exist within the academic institution before the student is admitted to the programme and precedes the teaching and learning process. Process deals with those variables which form part of what occurs in teaching and learning. Finally product relates to those variables which concern the outcome of the educational processes. Table 2.2, below outlines some of these variables:

Table 2.2 Biggs' Dimensions of Quality

Presage	Process	Product
Funding	Class size	Student performance and degree classifications
Student: Staff ratio	Class contact hours, independent study hours and total hours	Student retention and persistence
Quality of teaching	Quality of teaching	Employability and graduate

staff		destinations
Quality of students	Research environment	
	Level of intellectual challenge	
	Formative assessment and feedback	
	Other process dimensions of quality	

An assessment of many of the variables listed (Table 2.2) above will be addressed in this study through both the qualitative and quantitative methods. The data generated through the use of questionnaires, interviews and the focus group will be evaluated to determine whether any of the above factors will be identified and whether they will be found to be predictive in the performance of the students in the RENR. In consideration of the impact of the above mentioned variables, Gibbs (2010) concluded that while these factors are important to the educational output, the pedagogical practices that facilitated student engagement tend to produce the greatest gains.

2.7 Current trends in Nursing Education

Having examined the theoretical underpinning for this study, the global perspective on nursing education will be presented. This discourse will provide a view of the development of nursing education worldwide, and then compare it to the development of nursing education in Barbados and the Caribbean.

The world has been experiencing a critical shortage of nurses for many years. However, according to the Institute of Medicine (2001,2003; the North Carolina Institute of Medicine, 2004; Pew, 1995), the critical long-term global shortage of nursing personnel has increased the significance of preparing sufficient numbers of nursing students to improve the quality of health care. The response to this global phenomenon was the development of more rigorous curricula to promote the training of a higher skilled and competent nurse. Additionally, in order to combat the global shortage of nurses most nursing schools have increased their enrolment. However, the shortage of nurses and the increased enrolment have highlighted another problem. Kowalski et al. (2006) and Lorenz (2006) have indicated that there is also a shortage of nursing educators, and an aging nursing faculty, which will impact on the training of an increased number of students, as well as the resultant quality of the graduates.

This shortage, has also affected Barbados and the Caribbean where a significant number of nurses have migrated, in search of employment opportunities in the UK, USA, Canada and other jurisdictions. This migration has created a void in the nursing services of all the affected islands within the region, and created challenges that were not previously evident within the Caribbean. According to Salmon et al. (2007) there appeared to be several contributing factors such as; the relative numbers of nurses leaving the region; the unrelieved ongoing outflow of nurses; the loss of more experienced nurses; the loss of nursing educators; the lack of educational capacity to replace lost nurses; and an increased demand for quality health care by nationals within the Caribbean countries.

Dr. Chan, Director-General of the World Health Organization in her address at the WHO/PEPFAR Consultation in 2010, stated that the commitment to improve health has never been greater. She also stated that the United States President's Emergency Plan for AIDS Relief, or PEPFAR, in collaboration with the US National Institutes of Health and the Health Resources and Services Administration, had launched a five-year initiative aimed at strengthening medical education in sub-Saharan Africa. However she noted that many of the African nations had a clear idea of what was needed, particularly in terms of matching school curricula with a nation's priority health needs, especially in underserved communities.

However, African nations were not the only countries requiring assistance, and in 2010, PEPFAR and WHO along with other stakeholders, embarked on an initiative to help countries such as Thailand and the Philippines achieve better healthcare. This development was undertaken to achieve "a transformative scale up of nursing and midwifery education in an effort to expand their professional health workforce and improve the alignment between medical and nursing education and the evolving population health needs" (WHO 2010).

Nonetheless, health systems cannot deliver quality health services in the absence of sufficient numbers of appropriately trained, motivated, and remunerated health care staff (WHO 2010). In 2006, the World Health Report drew attention to a critical worldwide shortage of more than 4 million doctors, nurses, and other health care staff (Baumann & Blythe, 2008). In 2013, this figure stood at 7.2 million and is predicted to reach 12.9 million by 2035 (WHO, 2013), which will have serious implications for health on a global scale.

In Barbados, the Ministry of Health collaborated with the BCC to increase the intake of general nursing students as a means of reducing the nursing staff deficit that existed in the country. The shortage was especially acute at the QEH, the island's main hospital. However, the increase in enrolment has been accompanied by many challenges such as the student to faculty ratio, and inadequate clinical placement opportunities to accommodate the increased number of students. These challenges have continued to plague BCC over the years.

2.8 Predictors of Performance on Licensure Examinations

The establishment of licensure examinations for entry into practice, while important, brought with it inherent problems. While educational institutions have prepared students to enter the practice of nursing, there was the inability of some students to pass the licensure examination. This has resulted in these students being unable to practise, which has led to disappointment, emotional trauma and financial loss. The lack of success of the students after a period of intense preparation has raised the question of whether the preparation for the examination was adequate, or whether the examination was an adequate measure of student preparation and ability.

Several research studies have examined non-academic variables associated with performance on the licensure examination such as the candidates' age, gender, ethnicity, English as the primary language, and critical thinking skills (Beeman &Waterhouse, 2001; Beeson & Kissing, 2001; Campbell & Dickson, 1996; Giddens & Gloeckner, 2005; Haas, Nugent, & Rule; 2004; Higgins, 2005). However, much of the research that has explored non-academic predictors of success has failed to identify any significant group of variables that have been consistently associated with, or predictive of, performance of graduates on the licensure examination.

Despite studies which evaluated the effect of non-academic variables on performance in licensure examinations, academic variables have been shown to be more predictive of performance on licensure examinations. These studies which looked at the non-academic variables have found that the non-traditional aged graduates who were above the age of 23 years at the time of admission to the nursing programme, were associated with higher

NCLEX passes when compared with the traditional graduates (Briscoe & Anema, 1999; Daley, Kirkpatrick, Frazier, Chung, & Moser, 2003). Beeson and Kissling (2001) in another study have found that the older age of the student at the time of licensure was associated with NCLEX success.

Nonetheless other studies found age not to be a significant predictor of NCLEX-RN success (Beeman & Waterhous, Roncoli, Lisanti, & Falcone, 2000; Stuenkel, 2006; Yin and Burger, 2003). Other studies have revealed that gender was not a significant factor which could be correlated with passing or failing the NCLEX (Beeson & Kissling, 2001; Sayles, Shelton, & Powell, 2003; Yin & Burger, 2003). In addition to these studies, Haas, Nugent, and Rule (2004) found that men had a greater likelihood of failure on NCLEX than women.

Ethnicity is another variable which has been reported in many studies, as not being consistent in predicting NCLEX success or failure. Studies conducted by Endres (1997) and Yin and Burger (2003) found ethnicity to have no impact on NCLEX-RN success, whereas, other studies (Crow et al., 2004; Haas et al., 2004; Salyes at al., 2003), stated that African Americans and minorities were less likely than Caucasians to pass the NCLEX. This factor is however not a predictor for the students of the BCC programme since there is generally a homogenous ethnic group of students enrolled in the nursing programme.

2.8.1 Student Demographics

The World Health Assembly in 2001 passed resolution WHA54.12 which validated their commitment to the up-scaling of the nursing and midwifery professions. Further to this was the implementation of the WHA59.23 resolution, which stressed the development of global standards for initial education “as a priority activity in strengthening nursing and midwifery services in order to achieve the Millennium Development Goals (MDGs) for health” (WHO, 2009).

According to WHO (2009), the *“need for global standards arose due to the increasing complexities in health-care provision, the increasing number of health professionals at different levels, and the need to assure more equitable access to health care*". Baumann and

Blyte (2008) also argued for the development of international standards, as they believed that the proliferation of educational courses targeting international clientele, has led to concerns of quality and consistency. Irrespective of the reason, the variation in the levels of entry qualifications for professional nurses and midwives around the world must be made a priority. WHO (2009) states that many countries still accept initial education programmes at secondary school level to be adequate, while some countries stipulate university-level education as the minimum point of entry to the health professions for nurses and midwives (in practice, university-level education is more frequently specified for nursing than for midwifery).

There are numerous factors which play a key role in the performance of students in education. Therefore in discussing the RENR; it would be of some value to pay attention to the demographics of the student population for nursing. Some of these demographics that will be examined are age, gender, entry qualifications, and the grade point averages prior to writing the licensure examination. The demographic data were extracted from the student records at the BCC, which was used to provide basic information on the students involved in this study, as well as a means of tracking their performance during their time of study. These demographics may indeed be of value in predicting the success rate of candidates in the RENR.

However, if demographics were to be considered, one should first examine the entry qualifications for the general nursing programme. Even though the full impact of this demographic factor has to be determined relative to Barbados, entry requirements seem to play a significant role in the quality and number of the nursing graduates from the community college nursing schools in California. These schools displayed the highest attrition rates in the United States according to Leovy (1999), and had been mandated to implement non-discriminatory practices which ensured that prospective students beyond those with the highest grades could enter. Even though some nursing directors applauded such a system, others were critical of this position and suggested that this new mandate would inadvertently shut out those persons who had a better chance of completing the nursing programme in the California study.

As a result of the new mandate, Leovy (1999) inferred that the dropout and failure rates in the California institutions were associated with the programme entry requirements and not the administration of the licensure examinations. California faculty were also of the opinion that the increased attrition rates occurred due to a lowering of the entry requirements, which made it easier for students with poorer grades to enter the institutions. Unfortunately, because these persons were ill-prepared for the level and amount of work inherent in the programme, they subsequently failed.

Within the context of the BCC nursing programme there are two demographic factors which are used as criteria for entry into the nursing programme. These factors are the age of the candidate and the academic or entry qualifications. The minimum age for entry into the Associate Degree in General Nursing is sixteen years; however, there is no documented upper age limit. The applicants to the programme are required to be successful in CXC/GCE or equivalent examination body in English Language, at least one science, and two other subject areas as minimal entry criteria; however most students exceed the minimum entry requirements.

With reference to the licensure examinations, Daley et al. (2003) examined predictors for the NCLEX-RN success in the baccalaureate programme in the United States of America which may be important to this study. Daley et al. (2003) posited that there were two programme variables which were consistently associated with success in the NCLEX-RN; these were the final course grade for the didactic senior-level medical surgical course and the cumulative grade point average (GPA).

A similar study conducted by Roncoli et al. (2000) of the NCLEX-RN, also highlighted a significant difference in the GPA of the students relative to the success rate. They further posited that students with a science background were more likely to succeed than those without.

Based on the results of the study, it appears as though students who had a good science background and who maintained an above ‘B’ average were most likely to be successful in the NCLEX-RN.

The GPA has also been assessed by Rollant (2006) who, contrary to Roncoli et al. (2000), stated that the high risk student may not be those with GPA's of 3.0 and below, but those with 3.0 and above, as failures have also been seen with these students and were increasing in numbers.

These students had not only failed on the initial sitting but on subsequent attempts. Rollant (2006) surmised that this phenomenon was due to students becoming 'test wise' relative to how the teacher tests, and in most cases knew the answers to the test items; hence they were therefore not adept at critical thinking. The students because of high grades during the semester, did not deem it necessary to change their approach to learning or their study habits and therefore went into the NCLEX-RN with 'what they know' and hence fail.

Other studies have also examined factors that affected the pass rate of the NCLEX-RN, such as that carried out by Arathuzik and Aber (Rollant 2006), which highlighted internal and external concerns such as family responsibility, emotional distress and financial burden. Correlations were found for example with the GPA, a lack of, or demands of family and a lack of competence in critical thinking. As a result, Arathuzik and Aber (ibid) recommended strategies for the improvement of the pass rate inclusive of tutoring, stress management, classes in study skills and NCLEX-RN preparation.

Reference is also made to Wood (cited in Rollant 2006), who argued that to be successful in the NCLEX-RN, knowledge of the nursing content as well as familiarity and comfort with technology was required. This view was supported by Firth et al. (cited in Rollant 2006) who stated that "best practices associated with a change to computerised testing and more in-depth preparation enhanced students' opportunities for successes".

2.8.2 Assessment in the Training of Nurses

Assessment in education can be defined as a process used by educators to evaluate, measure and document the readiness of a student to deliver a particular outcome. It also refers to the wide variety of methods used in the evaluation of students. Erwin (1991) stated that assessment is the process of defining, selecting, designing, collecting, analysing, interpreting, and using information to increase students' learning and development. Assessment is hence the systematic basis for making inferences about the learning and development of students.

Another definition of assessment looks at programme assessment as opposed to student assessment. Palomba and Banta (1999) stated that assessment is the systematic collection, review, and use of information about educational programmes which is undertaken for the purpose of improving student learning and development.

According to Ramsden (cited in Wellard et al. 2006), student assessment is undertaken for a variety of reasons, such as a feedback mechanism for academic staff or students, or as a measure of accountability for the quality of education as outlined by Vleuten (cited in Wellard et al. 2006). There is also the consideration of certifying that the student has acquired the knowledge base, skills and competencies required to graduate.

Wellard et al. (2006) made a valid point when it was stated that "assessment defines what students regard as important, how they spend their time and how they see themselves as students, it follows then that it is not the curriculum that shapes the assessment but that assessment shapes the curriculum". Consequently, there may be a need to change existing curricula from content driven to competency driven. Dahlgren et al. (cited in Wellard et al. 2006), concurs and shares the opinion that if a deeper learning is to be achieved, there should be flexibility and variety in the learning as well as assessment techniques.

However, Astin (1991) stated that assessment has two purposes: to help select students (immediate purpose) and to enhance the excellence of the institution (underlying value). Astin (1991) also alludes to the classroom assessment and credentialing or certification as additional uses of assessment in relation to the college experience. Figure 2.1 below shows the taxonomy of the approaches to assessment which are of importance to nursing programmes. While there must be assessment of the individual, it is still necessary to assess the overall group. These levels of assessment take into account the knowledge domains and look at the instruction, certification, programme enhancement and an evaluation of the institution and the programme. This holistic approach ensures that most variables which affect student performances are taken into account.

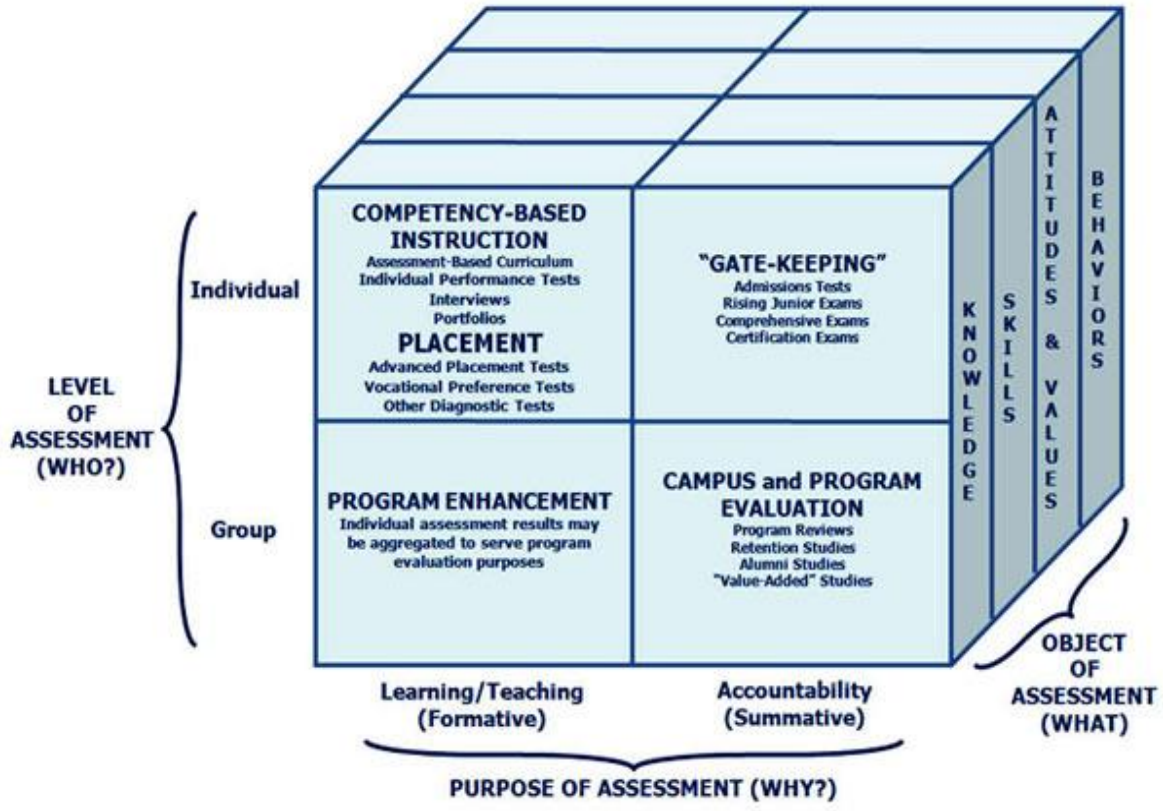

Figure 2.1Taxonomy of Approaches to Assessment

Sourced from (Terenzini, Patrick T., "Assessment with open eyes: Pitfalls in studying student outcomes." Journal of Higher Education

Much emphasis is placed on the performance of students in the final examinations however Vleuten (cited in Wellard et al. 2006) brings the validity of examinations as the final assessment in medical education into question, and challenges the ability of this process to reliably determine the competence of the student. Wellard et al. (2006) also refer to the findings of McManus et al. (1998) and the lack of correlation between the results for the final examination and the clinical performance of the same students, and inferred that clinical competence did not equate to success in the final examination.

Ramsden (cited in Wellard et al. 2006) also stressed the importance of remembering that assessment impacts on student learning and dominates the way in which they orientate their learning. Hence it is imperative that assessment methods are utilised that allow for a holistic approach to the training of nurses as well as provide feedback to the assessor relative to their guidance in student-learning (Oermann et al., 2009).

Table 2.3 gives an example of how assessment can be devised using a learner-centred approach. It takes into account the premise that students possess a variety of learning styles which must be taken into account when devising an appropriate form of assessment.

Table 2.3 Learner-centred Assessment on College Campuses

Formulating Statements of Intended Learning Outcomes	Statements describing intentions about what students should know, understand, and be able to do with their knowledge when they graduate.
Developing or Selecting Assessment Measures	Designing or selecting data gathering measures to assess whether or not our intended learning outcomes have been achieved. Includes: Direct assessments – projects, products, papers/theses, exhibitions, performances, case studies, clinical evaluations, portfolios, interviews, and oral exams – which ask students to demonstrate what they know or can do with their knowledge. Indirect assessments – self-report measures such as surveys – in which respondents share their perceptions about what graduates know or can do with their knowledge.
Creating Experiences Leading to Outcomes	Ensuring that students have experiences both in and outside their courses that help them achieve the intended learning outcomes.

Figure 2.2 below, provides a schema of the fundamental elements of learner-centred assessment which speaks to the areas which must be attended to in order to ensure that the desired learner outcomes are achieved. There is an interrelated flow between concepts, which relates to the fact that learning is a continual process, and the concepts are built upon the students' progress between stages.

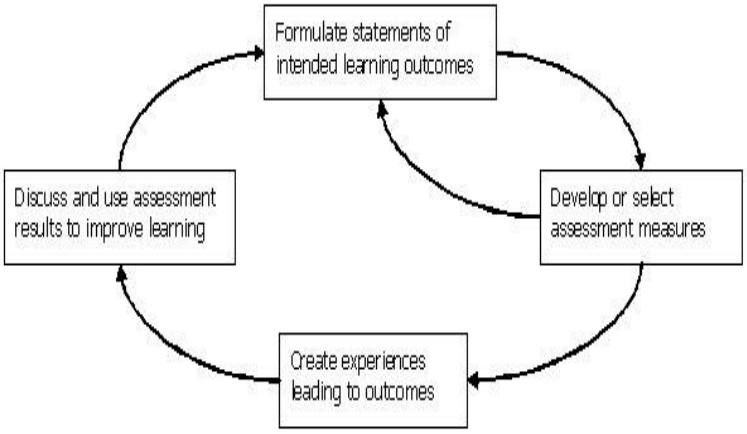

Figure 2.2 Four fundamental elements of learner-centered assessment

Sourced from *(Learner-Centered Assessment on College Campuses: shifting the focus from teaching to learning by Huba and Freed 2000)*

In nursing education in order to adequately evaluate the training programme and the students, the expected outcomes must be clearly stated. These are often times documented in the course syllabi as learning objectives. These objectives then serve to give direction to the type of learning experiences the students will need to be exposed to, as well as to determine how these experiences will be achieved and evaluated.

Medical education has progressed to such an extent that teaching and learning have become more scientific and rigorous; curricula are based on sound pedagogical principles. For example, approaches that take into account the students' contribution to his or her learning such as, problem-based and other forms of active and self-directed learning have become mainstream (Tabish 2008). This dictates that a new vision for the operations of the Nursing Department at the BCC, be developed, not only to ensure that the nurses acquire the knowledge base and skills required to graduate, but that the performance of the student is greatly improved, through processes such as continuous student assessment and ultimately their success in the RENR.

It is important to remember however, that the parameters being assessed and the methods used will play a significant role in what is learnt by the student. Additionally, one must also bear in mind that irrespective of the particular instrument chosen for the assessment of students, its validity, reliability and feasibility should be determined (Tabish 2008).

Vleuten (cited in Wellard et al. 2006); Hurst (2015) and Alias (2005), consider validity and reliability of assessment instruments in education to be extremely important. However, Vleuten (cited in Wellard et al. 2006) questions the validity of using examinations as the final assessment in medical education and challenges the ability of this process to reliably determine the competence of the student. Additionally, according to the findings of McManus et al. (cited in Wellard et al. 2006), there is a lack of correlation between the results for the final examination and the clinical performance of the same students, and inferred that clinical competence did not equate to success in the final examination.

Even though Wellard et al. (2006) makes a valid point, assessment tools can still be used to provide the assessor with information relative to the outcomes achieved, as well as identify the areas in training that may require adjustment due to displayed shortfalls (Oermann et al.

2009). Hence it is imperative that assessment methods in medical education are utilised that allow for a holistic approach to the training of nurses, and provide feedback to the assessor relative to their guidance in student learning (Oermann et al., 2009 and Tabish, 2008).

These methods may either be formative, which occur in the short term, as students are conceptualising new content and integrating it into prior knowledge or summative which occurs after a longer but defined period of learning. Assessment may be written such as with essay and multiple choice questions, patient management problems, checklists, rating scales, portfolios, short and long case assessments or performance based, which may include, simulators, simulated patient surgeries, video and peer assessment (Tabish 2008).

Of the written assessments the most common are the essay and multiple choice questions, which fall into constructed-response and selected-response respectively. They are easy and inexpensive to administer and score, amenable to item analysis, and adaptable to various subject domains, but are criticised for encouraging superficial learning (Zaremba and Schultz 1993). Hift (2014) also argued that constructed-response question test higher order cognitive processes in a manner that the selected-response cannot, and consequently have greater validity.

Biggs (2003) posited that there is a range of formative and summative assessment practices which correspond with the principle that the type of assessment should include a genuine representation of the course objectives. Biggs (2003) further stated that they should include a range of assessment practices from norm referenced through to peer and self-assessment strategies. Others report of the success of peer and self-assessment (Struyven et al., 2005; Dochy et al., 1999), portfolios (Pitts et al., 2001; Lettus et al., 2001) and simulation (Boulet et al., 2003; Weis and Guyton-Simmons, 1998).

The nursing programme at BCC utilises a variety of testing methods which include multiple choice questions and subjective type questions to provide opportunities for students to demonstrate an ability to critically think, analyse and demonstrate self-expression. Additionally, simulations (referred to as total care at BCC), management portfolios and other similar assessments are used to determine the clinical competence of the students.

More sophisticated methods, must be used to assess clinical performance (Norcini and McKinley 2007), such as direct observation of long and short cases, the use of standardised patients and objective structured clinical examinations. The latter technique assesses competencies in a wide range of subjects, measures outcomes and provides feedback in specific areas of learning (Tabish 2008).

Ramsden (cited in Wellard et al. 2006), nonetheless, stresses the importance of remembering that assessment impacts on, and dominates the way in which students orientate their learning; how much they study and how effectively they study (Jimaa 2011). Tabish (2008) stated that measuring progress in acquiring core knowledge and competencies may be a problem if the examinations measure multiple integrated abilities, such as factual knowledge, problem-solving, analysis and synthesis of information, which implies that students may advance in one ability and lag in another. Jimaa (2011) also points to unsuitable assessment methods which impose overwhelming pressure on students to take the wrong approach to learning tasks. Therefore, it is often the assessment, not the student that is the cause of the problem.

Regardless of the technique used, it is important to note that the purpose of the assessment should direct the type of instrument used. It is also important to note that modern approaches recognise that no single form of assessment is suitable for every purpose. Wellard et al. (2006) concurs and is of the opinion that if a deeper learning is to be achieved, there should be flexibility and variety in the learning as well as in the assessment techniques. Therefore, programmatic assessment is needed, which explicitly recognises that assessment is best served by carefully combining a range of instruments which are matched to a particular purpose at each stage of the learning cycle (Hift, 2014 and Arter et al. 2004).

Bond (1995) posited that schools are now expected to help students develop skills and competencies in real-life, “authentic” situations, and to graduate students who can demonstrate these abilities, through performance on alternative assessments rather than standardised tests. This infers that students should be able to acquire a closer match between what is learnt in the classroom and the skills that are required in the clinical setting.

However, Wellard et al. (2006), made a valid point when they stated that “assessment defines what students regard as important, how they spend their time and how they see themselves as

students, it follows then that it is not the curriculum that shapes the assessment but assessment shapes the curriculum". Consequently, there may be a need to change existing curricula from content driven to competency driven Dahlgren et al (cited Wellard et al. 2006).

2.8.3 Impact of Faculty

In discussing the factors which may play a role in the poor performance of students in the RENR or any other standardised test, it is important to explore the variables as well as the constants. Although it appears as though most of the analyses zero in on the student-related parameters, one must not underestimate the role faculty plays in the performance of the students.

McQueen et al. (2004) conducted a study on the community approach to the preparation of nursing students for the National Council Licensure examination (NCLEX). This is an examination required for nursing graduates to be licensed to practice as nurses in the United States. Their findings indicated that faculty involvement in the preparation of students was pivotal to their success. In this programme the students were assigned to faculty members who worked with them on a consistent basis helping them to develop various strategies. This included testing strategies, remediation, confidence building activities, and individual and group strategies. McQueen et al. (2004) also indicated that this practice prevents the 'hiding out' behaviours which may be exhibited by some students, who then do not benefit from the assistance which is available to them.

Additionally, students are given a series of practice tests which also serve as indicators of how they are likely to perform on the NCLEX. This approach is not operational at the BCC, but may prove to be beneficial to students relative to their performance in the RENR. At the BCC, the students are not assigned to individual dedicated faculty members, instead, faculty are assigned to groups of students, for the purpose of coordinating their activities.

Faculty also have a significant role to play in the assessment of students, whether formative which identifies learning needs thus providing immediate feedback and encouraging self-directed learning, or summative which examines the extent of knowledge, as well as the skills acquired by the student. A combination of these methods would therefore attain the

objectives of the faculty relative to the expected outcomes as referred to by Dahlgren et al. cited in (Oermann et al. 2009). Students may also be assessed through observations of patient and family interactions as well as their association with faculty. Therefore, information on assessment, evaluation and grading in nursing practice may provide faculty with guidelines to improve their understanding through evidence-based practice. In addition to this, planning the manner or methods of assessment, allows faculty to ensure that their methods are fair and consistent (Oermann et al. 2009).

Hunt et al. (2011), also makes reference to the impact of faculty and states that assessing student practice was a "worldwide matter of concern to all practice-based professions". In addition to Oermann et al. (2009) they also indicated that assessment is not a single event, but involves observing students throughout the clinical setting and making judgments about their performance at specified intervals, as well as at the end of their clinical assignment. However in association with studies undertaken in New Zealand, Australia and Scotland, Hunt et al. (2011) opined that the assessors have the responsibility to determine whether or not the practices observed were of the required standard and believed that it was possible for 'under-performing students' to enter the workplace without having obtained the level of competence required to fulfill the role. Hunt et al. (2011) also made reference to Duffy and Luhanga et al. who postulated that the pass rate for the practical assessment of students appeared to be higher than expected, either due to the reluctance of some assessors to assign a failing grade, or the presence of mitigating factors which frustrated their attempts to appropriately assess the student.

One of these factors alluded to by Gainsbury cited in Hunt et al.,(2011) was that the assessment protocols were too complex, another was the tendency to pass the buck as stated by Duffy cited in Hunt et al (2011). There is also the consideration that intimidation by students or the threat of legal action may result in the inability to assign a failing grade where deserved, as referred to by Luhanga et al. cited in Hunt et al.(2011).

Nonetheless, Oermann et al. (2009) posited that students complete tests repetitively, bringing into question whether or not these tests provide information to guide students' learning. Therefore faculty should base their evaluation strategies on the outcomes that are to be

assessed, rather than simply preparing them for the NCLEX-RN or as in the case of Barbados and the Caribbean, the RENR.

Another important role that faculty plays, is their ability to motivate students. Entwistle and Schmeck (1988) examined the concept of motivation in studying, where they believed that there is more than just a link between student performance and motivation. Additionally, they were of the opinion, that the combination of these factors is vitally important to students' successes, and this belief, underpins the use of motivation in the learning process. Moreover, it is thought that students learn best in a setting which is conducive to learning. For example, where the interest in the subject is high, where encouragement is given to not only think constructively but also critically and where students have instilled a "curious nature", which makes them willing to learn.

It has also been said that students would be more successful if faculty matched their teaching styles to the learning styles of the student. Therefore tutors should ensure that students understand the concepts being presented, by allowing them the opportunity to derive it from their own mental strategies, experiences and perceptions according to Schmeck (1988) and not simply giving them information to regurgitate. Akkoyunlu and Yilmaz-Soylu (2002), also makes reference to the importance of the teaching environment, taking into account the learners' characteristics, competence and experiences throughout the planning process. In essence, effective teaching occurs when students are placed in situations, which encourage the development of more complex concepts of learning, and where a more holistic approach to teaching is used, and which considers the characteristics, and uniqueness of the student.

However, teaching styles are not the only factors involved in the learning process, as one must remember that "learning" must be sustained, and to do this, motivation should be considered. There are various aspects of motivation, but Entwistle (1988), looked at achievement motivation and the associated fear of failure, as he believed that the student's motivation to learn is dependent not only on those factors previously mentioned, but also on the hope for success.

Therefore, faculty should not try to separate the motivation of students from the learning and teaching process, as it is by teaching, and the use of these methods which cause the students to be motivated, and hence willing to learn.

Therefore, in this study it is expected that the existing gaps in methodologies employed for the training of nurses, or the administrative structures which support their training will be identified. Moreover, it is hoped that the research would garner valuable information on the factors which affect the first time performance of the students, with an overall increased percentage pass rate in all papers of the RENR and provide an explanation for the performance of the students.

2.9 The Regulation of Nursing in Barbados **(THIS SECTION IS NOT NEW BUT WAS REPOSITIONED)**

The historical development of nursing includes the system of monitoring, registering and the setting of standards for nursing practice, which in Barbados is undertaken by the Nursing Council of Barbados. The Council was created through a legislative framework and operates under the Nurses and Midwives Act 2008. The council has the mandate to regulate the education and practice of nurses and midwives in Barbados and gains its authority through the Nursing Act as it sets the regulatory framework for the education of nurses and midwives. The Nursing Council is a self-regulating professional body which carries out its functions under the Nurses Act (2008), and serves as the final authority in the interpretation and enforcement of the act. Germane to its function is the determination of standards for education and practice of the registered nurses, and the establishment of minimum criteria for entry into nursing practice in Barbados.

However, while the Nursing Council sets the standards for the education and practice of the nursing profession, BCC as the training institution has its own built in quality control mechanisms. The BCC is thus not only required to conduct its training based on quality standards, but it also has to ensure that there is congruence in relation to the standards enforced by the college relative to those enforced by the Nursing Council. As a consequence, the college is usually afforded a ‘seat’ on the board of the Nursing Council, to ensure that there is synergy among the educational institution and the professional registering body. This collaboration ensures that the standards of nursing practice as set out by the Nursing Council are enshrined in the nursing curriculum at the BCC.

Therefore, within BCC, there is a system of moderation of examinations. Each semester, all examinations are moderated to ensure the quality, relevance and validity of the examinations. The examination scripts are also second marked to ensure that there is consistency in the grading and the assignment of the final grades. There is also a system of external moderation which allows for greater scrutiny and provides an opportunity for systems improvement when the need arises. Finally there is a measure of quality assurance which involves the conduct of student evaluations of the faculty and the courses. This evaluation addresses any issues that may have arisen during the semester, such as inconsistencies in the teaching methodologies or lack of clarity in the use of educational materials. The information compiled from these evaluations is used to determine a strategic direction for the continuous development and improvement of the faculty and the curriculum.

2.10 Nursing Licensure: The Regional Examination for Nurse Registration (RENR)

The regional licensure examination for nurse registration was conceptualised in the Caribbean in 1972. However, as a precursor to the implementation of the RENR examination it was important that a standardised document be formulated which would be used as a guide to the training of nurses across the Caribbean region. This resulted in the formulation of a document known as the blueprint, which was developed out of workshops held between 1980 to1991. The blueprint provides a reference for the RENR and comprises the philosophy, objectives, competencies and content outline of nursing and the relevant supporting sciences, which should be included in the curricula of all nursing schools whose graduates are intending to write the RENR.

The blueprint outlined the curriculum from which the RENR examination was structured with the two main areas being Man & His Environment and Nursing. Nursing was divided into clinical and functional nursing, the former dealt with the nursing process, whilst the latter examined concepts such as the nursing profession, management or administration, research applications, health teaching, interviewing and counselling (Regional Nursing Body 1992).

The blueprint also detailed the criteria for the clinical assessment which sought to ensure that all requirements for the prospective graduates would be assessed. The more important concepts included in the criteria linked the components of the clinical setting to the teaching

of didactics and ensured that the tools used for evaluation and assessment were relevant to teaching. It was also noted that feedback should be given as appropriate, so that students can either build on their experiences or correct those areas that required adjustment.

According to Reid (2000), the rationale for the implementation of the RENR was comprehensive and included the following:

Table 2.4 Rationale for Implementation of the RENR Reid (2000)

The introduction of reciprocity for Registered Nurses among countries of the region,
Improving the system of examination procedures for nurses, including the introduction of objective examination procedures.
Establishing a uniform standard of testing and evaluation of nursing students for Registration in the commonwealth Caribbean.
Fostering the implementation of a uniform testing policy.
Providing adequate security for the production and administration of examinations,
Providing a pool of qualified nurses as nursing examiners.

The rationale listed above in Table 2.4 resulted in the compilation of a document, the purpose of which was to "*provide a uniform structure from which a standard testing instrument can be developed and used among other methods to determine eligibility of graduates of nursing programmes to practice professional nursing in the CARICOM countries*" (Reid 2000).

Reid (2000) posits that the rationale for the introduction of the RENR had some benefits which included factors such as: the standardisation of nursing education in the region, and the establishment of general competencies for Registered Nurses across the region. Additional benefits included the reciprocity for Nurse Registration and ease of movement for professional practice among countries of the region, the improved quality of nursing education and examinations, and the resultant improved quality of patient care delivered. These benefits were projected based on the expected competencies, such as problem solving, safety and competence, knowledge application, effective communication and interpersonal skills.

However, in order to maintain its relevance, the blueprint has been reviewed over the years, with the most recent review being conducted in 2011. The review of the blueprint did not result in any significant changes in its structure; hence there was no need to make changes to the curriculum delivered by the BCC.

2.11 Structure of the RENR

The examination is administered twice a year that is October and April under strict administrative guidelines, as outlined in the administrative manual for the RENR. Candidates are required to pass each of the four papers with a minimum score of 60%. When students fail any of the papers they are allowed a total of two chances to re-write the examination and be successful in all papers.

According to the Regional Nursing Body (1992), the RENR consists of four papers, which are structured as follows: Papers I and II are the clinical nursing examinations which are composed of four essay questions, one hundred objective type questions respectively. Papers III and IV are the functional papers which comprise four essay questions, and fifty objective type questions respectively.

The objective items focus on the testing of the students' knowledge, comprehension and application skills, while the essay questions examine the cognitive and affective domains. The content which is tested for in the clinical nursing Papers I and II includes but is not limited to the following topics: health, growth and development, needs and their satisfaction, indicators of community health, family life, and pregnancy. The papers are graded on assessment, planning, where planning and implementation are each allocated 25%, whereas assessment and evaluation are 30 and 20 % respectively.

The content for the functional nursing that is Papers III and IV may be seen below. However, the main emphasis for these components is placed on nursing as a profession and nursing administration and management, and includes: the role of the nurse in disaster preparedness, group dynamics, teaching and learning, communication, the profession of nursing, health and health related organisations at national, regional and international levels, and application of basic research methodology in solving health problems. These papers are graded differently

compared to Papers I and II. The profession of nursing, administration/management and teaching, interviewing and counselling are allocated 30% each and research is allocated 10%.

According to the blueprint, the objectives and test items of the RENR have a defined lifespan. The specific objectives are to be retained for five years, after which they are reviewed and made current as necessary, while the test items will be single use before being stored, reviewed and made available for possible reuse after two years. The completed scripts are stored for five years and subsequently destroyed.

2.12 Organisational Issues

The Barbados Community College has been charged with the responsibility of providing the training for the nursing profession in Barbados. While the BCC has responsibility for the training and certification of nurses to practise, it relies heavily on the support and cooperation of a number of health care organisations to facilitate the clinical aspects of the programme. This requires a level of commitment and cooperation from all health care agencies to provide quality experiences for the student nurses and this is facilitated by both public and private health care institutions.

The Queen Elizabeth Hospital (QEH) is the lone teaching hospital in Barbados and therefore plays a critical role in the clinical training of the students. There has been a longstanding affiliation between the QEH and the BCC where the BCC students are allocated at the hospital for their major clinical attachment and the acquisition of their clinical skills. This arrangement is such that the staff at the QEH functions as mentors and coaches for the students and gives support to the clinical instructors from the BCC. The Ministry of Health on the other hand provides major support for the BCC clinical programme by facilitating the attachment of the nursing students at the polyclinics and geriatric hospitals.

There are no formal documents detailing the associations between the BCC and the health care agencies, but there is an excellent working relationship. This does not however negate the fact that there are challenges experienced by the BCC in relation to the clinical placements and in the perception of the role of the staff of the various agencies in relation to their interaction with the students. This lack of clear documentation occasionally presents

challenges for the clinical programme, and the students individually. This aspect of the training therefore presents itself as a possible factor in the performance of the students in the RENR, their training and the quality of the programme.

2.13 Conclusion

This chapter explored the literature in relation to the study undertaken which looked at the factors which affect the performance of BCC Associate Degree nursing students. It further explored the philosophical underpinnings of this study and of adult education, to set a framework for the study itself.

The review of literature identified a number of factors which have the potential to affect the performance of the students in the licensure examinations. Some of the factors identified in the literature have been divided into academic and non-academic factors and include factors such as age, gender, grade point average, and pre-nursing entry qualifications and provides relevance for the study. Other factors include grade point averages and the pre-admission qualifications of the students. The chapter also included a fairly comprehensive review of the theory of constructivism, its role in nursing education, and its association with the pedagogical approaches to teaching and learning in nursing education.
The review of the literature also demonstrated that there is a lack of published studies on nursing education in Barbados and the Caribbean, and also on the role, function, and performance of the RENR as the regional licensure examination, as an indicator of the quality of service delivered by the graduates. There was also some emphasis placed on the quality in higher education in relation to areas such as presage, process and product and how these attributes can be examined and implemented in a nursing programme where possible.

The review of the literature has also provided an opportunity for the researcher to identify any gaps in literature as relates to the training of nurses in Barbados, and to identify similar practices in the training of nurses which may serve as confirmation that the training of nurses in Barbados follows the same or similar pathways as in other countries. While there is much published data in relation to the performance of graduates of nursing programmes in their licensure examinations, this is a gap that has been identified in relation to Barbados. The literature review therefore provided the opportunity to inform the study and the development of the data collection instruments. In the literature there is much discussion on the factors

which are potential factors in the performance of the students in their licensure examination. As a consequence, the researcher has sought to determine if factors such as GPA, age, gender, and social factors are indicators for the performance of the BCC students in the RENR.

Additionally, the literature review has supported the idea that constructivism is used in nursing education, but more importantly, it is successfully employed in the training of nurses. The discussion on constructivism therefore highlights the need for the faculty of the BCC programme to be more structured in their approach to the teaching and learning aspects of the programme. Thus it is expected that as a result of this study there will be a concerted effort made by faculty to ensure consistency in the preparation and assessment of the students prior to their writing the RENR.

This literature review therefore provides support for the study undertaken, and will serve to validate the findings of this study. The third chapter will therefore present a detailed outline of the methodology utilised in the study.

CHAPTER 3 METHODOLOGY

3.1 Introduction

The research design has been described by Polit and Hungler (1999; pg.155) as a blueprint, or the outline for conducting a study to ensure that maximum control will be exercised over the factors that could interfere with the validity of the research results. In an attempt to collect a variety of data which could be triangulated, the researcher opted to use a mixed method approach for this study and sought to explore the factors which may have impacted the performance of the BCC nursing students in the RENR through the overarching research question which stated:

> ***What are the factors which contribute to student performance in the Regional Examination for Nurse Registration (RENR) among nursing students in the BCC nursing programme?***

The following supporting questions were also identified as being important to the study, to assist in providing information on the factors which influence the performance of the students in the RENR. These questions are as follows:

1. *What were the students'/graduates' perceptions of the factors which affect their success in the RENR?*
2. *To what extent do the GPA scores predict student success in the RENR?*
3. *Is there a relationship between the age and gender demographics and the performance of the students on the RENR?*
4. *Which of the four RENR examination papers do students experience the greatest difficulty?*

Hence, the research design for this study will be non-experimental, retrospective, descriptive, and correlational in nature. This design was chosen to identify the statistically significant relationships among the independent variables such as age, grade point averages (GPA), and the performance of BCC nursing students on the RENR. The study will utilize existing data, specifically student academic records, GPAs, statistical data from the Nursing Council of Barbados, and data on the students' performance in the RENR examination. The students in this study are final year students who are enrolled in the three year Associate Degree in general nursing and also graduates of the programme. These students would have been

exposed to various teaching and learning experiences, and have completed at least 95% of their clinical allocations; hence they were in a good position to give a broad view of the programme and the associated factors which they perceive may impact their performance on the RENR. This group of students included school leavers, persons who had nursing experience, and matured persons seeking a career or a change of career. Given the gender demographic of the students it is expected that there were more females in the study group hence it included persons who head families and as such would have been exposed to different challenges than the school leavers.

Considering the characteristics of the design of the study, the researcher was satisfied that the design fitted the purpose of the study. The intent was to gain insight into the factors which affected the performance of the BCC nursing students in the RENR as viewed by students, graduates and tutors, and how these factors may potentially affect their academic performance. It was through the description of their perceptions that the researcher was able to gain the insight to, formulate strategies that could improve the performance of the students in the RENR.

This chapter will therefore provide details on the design of the study as well as its purpose and associated research questions. The theoretical framework will be included, as well as an account of the study cohorts with respect to: sample selection and size, data collection procedures, pilot study, administration of questionnaires and the interviews and focus group activity. The triangulation of the various types of data collected and the methods of analysis will also be detailed in this chapter.

3.2 Research Purpose

The purpose of this study was to examine selected variables which may function as predictors of the performance of the Barbados Community College's Associate Degree nursing students and their actual performance in the RENR. Hence the results obtained with respect to the factors that contribute to student performance in the Regional Examination for Nurse Registration will be used to recommend strategies which may assist with the improvement of the performance of nursing students in the RENR.

3.3 Theoretical Perspectives

Three philosophical positions were examined to determine which underpinning best suited this study, and allowed for the selection of the more appropriate research methodology, these were; positivism, post-positivism and the interpretivist paradigm.

3.3.1 Positivism

The positivist paradigm of exploring social reality is based on the philosophical ideas of the French philosopher August Comte, who emphasised observation and reason as a means of understanding human behaviour. According to Walsham (1995b) the positivist position maintains that scientific knowledge consists of facts, whereas its ontology looks at reality as being independent of social construction. Positivistic thinkers adopted his scientific method as a means of knowledge generation. Hence, it has to be understood within the framework of the principles and assumptions of science, such as determinism, empiricism, parsimony, and generality. (Cohen et al 2000).

3.3.2 Interpretivism

The position of interpretivism in relation to ontology and epistemology as stated by Hudson and Ozanne (1988) is that interpretivists believe that reality is multiple and relative. Lincoln and Guba (1985) on the other hand explained that these multiple realities depend on other systems for their meanings, which makes it even more difficult to interpret in terms of the fixed realities Neuman (2000). Carson et al. (2001) posited that interpretivists tended to avoid rigid structural frameworks such as in the positivist research. They adopted instead more personal and flexible research structures which are receptive to capturing meanings in human interaction (Black, 2006) and make sense of what is perceived as reality.

Collins, (2010, p.38), stated that interpretivism is “associated with the philosophical position of idealism, and is used to group together diverse approaches, including social constructionism, phenomenology and hermeneutics; approaches that reject the objectivist view that meaning resides within the world independently of consciousness”. Therefore, the goal of interpretivist research according to Neuman (2000), Hudson and Ozanne, (1988) is to

understand and interpret the meanings in human behaviour instead of generalising and predicting causes and effects. For an interpretivist researcher it is therefore vitally important to understand motives, meanings, reasons and other subjective experiences which are time and context bound (Hudson and Ozanne, 1988; Neuman, 2000).

3.3.3 Post-Positivism

According to Tashakkori and Teddlie (1998) post-positivism reflects the "common understandings regarding the nature of reality" which is usually held by researchers using both quantitative and qualitative methodologies. The post-positivists are of the view that the values of the researcher are linked to one's personal understanding of how reality is constructed. While this position may be true, researchers who use a post-positivist approach seek to work within a research paradigm which provides empirical evidence for the matter being researched. This philosophical view also maintained that there is only one reality, and as such the researcher must maintain an objective point of view Mertens (1998).

While objectivity provided the researcher with an unbiased view of the matter under consideration, such a "dispassionate" view was considered to be inappropriate for this study, as the researcher was inextricably connected to the topic and the participants involved in the study. Thus, the notion that truth can be measured in terms of being value free or generalisable within a single reality which is objective and measureable (Lincoln and Guba 1985) was rejected, as the researcher was of the opinion that this approach would not do justice to the study undertaken.

Nonetheless, the overall aim of this study was to provide information which will lead to changes within the Nursing Department and an improvement in the performance of students in the first time sitting of the RENR. Therefore, considering the nature of this study, it was the opinion of this researcher that the first two approaches of positivism and interpretivism, which employ aspects of quantitative and qualitative approaches, would allow for greater analysis of the data required to answer the research question in relation to the predictive factors which affect the students' performance in the RENR. Furthermore, such an approach lends itself to triangulation which supports data validation through multiple means.

3.4 Research Design and Data Collecting Instrument - Contextual Design

On its own, the qualitative approach gives a more detailed description of the phenomenon being investigated and allows for synthesis of the interpretations. Fryer (1991) argued that qualitative researchers try to decode, describe, analyse and interpret the meaning of certain phenomena, which are happening in their customary social contexts. However the methodological framework for this study is a mixed methods design, combining quantitative and qualitative data which provide complementary perspectives on the research problem (Morse 1991).

According to Johnson and Onwuegbuzie (2011) "mixed methods research is formally defined as the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study" (pg. 17). Many researchers (Tashakkari and Teddlie, 2003; Clarke and Cresswell, 2008; Johnson and Onwuegbuzie, 2011) advocated the use of mixed method approaches because they recognised the value of combining both quantitative and qualitative research.

According to Carr and Kemmis (2002), Tashakkori and Teddlie (2003), Johnson and Onwuegbuzie (2004), it is important to combine these two methods of research especially when addressing difficult educational problems, which need to be adequately examined. Tashakkori and Teddlie (2003) argued that the mixed method approach can simultaneously answer confirmatory and exploratory questions. It can also provide stronger references through depth and breadth in answer to complex social phenomena, and also provides the opportunity through divergent data collection to include the perspectives of individuals. Additionally, McMillian and Schumacher (2006) cited that mixed methods can provide the researcher with more valid and reliable results due to multiple collections of data.

Palak and Walls (2009) posited that there are a number of technical advantages to using the mixed method design. Denscombe (2008) identified the advantages, as the improvement of the accuracy of data, the ability to produce a more complex picture of the problems under investigation, avoiding the biases associated with the mono-method, developing analyses and building on initial findings by using contrasting data or methods and providing the means to identify areas for future research (pg. 272).

Babbie and Mouton, (2008 pg. 272); Brink et al., (2006 pg. 64), contended that events cannot be understood outside their own context. Hence it was important that the researcher attempted to understand the phenomena under investigation, the setting or context, and the actions of the participants from their own perspective, as external social and environmental factors, such as lighting and room temperature can influence both the implementation of the study and the results (Burns and Grove 2009 pg. 178).

3.4.1 Mixed Method Approach

This approach is based on the assumption, that collecting diverse types of data best provides a more complete understanding of a research problem than either quantitative or qualitative data alone (Cresswell 2009). While a qualitative approach for example, may give a detailed description of the phenomenon being investigated and allows for synthesis of the interpretations, the use of a mixed method approach can provide stronger evidence for a conclusion through the convergence and corroboration of the findings. Johnson & Onwuegbuzie (2004) argued that this approach can also add insights that might be missed when a single method is used. Additionally, a combination of methods could also increase the ability to generalise the results when compared to the qualitative study alone (Bryman 1998). Therefore, qualitative and quantitative approaches when used together can produce complete knowledge that is necessary to inform theory and practice (Johnson & Onwuegbuzie 2004).

In the first phase of this study, a survey about the perception of students in relation to the perceived factors which influenced the performance of the BCC student nurses in the RENR was carried out using the final year nursing students in addition to graduates of the programme. The objective was to engage in a qualitative analysis of the student experience and their views in relation to the RENR examination. In the second phase, the focus was on qualitative open-ended interviews to allow for the collection of detailed views from participants to assist with explaining the initial quantitative survey (Cresswell 2009). This process is categorised as convergent parallel mixed methodology, where the researcher first conducts the quantitative study, analyses the results and then builds on the results to explain them in more detail with qualitative research (Cresswell 2009). It is considered explanatory because the initial quantitative data are explained further with the use of qualitative data (Cresswell 2009).

In order to complement the data generated by the qualitative and quantitative methods, primary data were also collected from the Department of Student Affairs at the BCC and the Nursing Council of Barbados. Data were also sourced on the performance of the students from Belize in relation to the performance of their students in the RENR.

3.4.2 Triangulation-SECTION RELOCATED AND EXPANDED

Greene & McClintock (1985) defined triangulation as the use of two or more methods and Morse (1991) posited that "methodological triangulation" (pg. 149) should use at least two methods. Thus this study has included more than one method to ensure that triangulation of the data can occur. Triangulation can be classified by data or by method. In this study both types of triangulation were employed. As a consequence, the data generated by the use of interviews, a focus group, questionnaires, and other secondary data from student records and the Nursing Council will seek to obtain general consensus of findings, thus forming the basis for the identification of the factors which are predictive of the performance of the BCC nursing students in the RENR.

The importance of triangulation in the mixed method has been highlighted by Jick (1979 and he stated that the triangulation strategy "demands creativity from its user and ingenuity in collecting data and insightful interpretation of data". Jick (1979) further argued that triangulation can "capture a more complete holistic and contextual portrayal of the unit (s) under study" (p.109). Greene, Caracelli & Graham (1989) in support of this view posited that the mixed method offered a triangulation that enhanced the validity of the research findings as the methods will inevitably corroborate the data of one another. Silverman (2000, 2001) further supports this position since they are of the view that when researchers draw data from different contexts it allows for greater validity of the study.

3.4.3 Reliability-SECTION WAS RELOCATED

Reliability indicates how free a scale is from random error (Pallant 2005) or is concerned with the consistency of responses to the questions (Saunders et al., 2003). Test-retest and internal consistency are frequently used indicators of reliability but internal consistency is the recommended choice. This is the degree to which the items that make up the scale are all measuring the same underlying attribute (Pallant, 2005).

On the issue of reliability, Guba and Lincoln (1981) cited in Morse et al. (2002) stated that in order for research to be considered to be of value there are some characteristics which must be present. These characteristics include “truth value”, “applicability”, “consistency”, and “neutrality”. They further posited that both qualitative and quantitative research have their own paradigm where in quantitative studies the paradigm is rationalistic as opposed to naturalistic as in qualitative studies. Guba and Lincoln (1985) are further cited by Morse et al. as stating that when discussing reliability within the context of qualitative research, the criteria to be used should include credibility, transferability, dependability, and confirmability. In order to obtain trustworthiness in qualitative research, a number of audit trials and member checks such as “*peer debriefing, prolonged engagement, and persistent observation*” should be used to safeguard the reliability of the study

Seale (1999) cited in Golafshani (2003) argued that when conducting qualitative research good quality of the study is achieved through reliability and validity. In widening the conceptual framework of reliability and demonstrating the congruence of reliability and validity in qualitative research, Lincoln and Guba (1985) stated that: "Since there can be no validity without reliability, a demonstration of the former [validity] is sufficient to establish the latter [reliability;]". Patton (2001) also supports this view and states that with regards to qualitative research, reliability is a consequence of the validity of the study. The steps taken to ensure reliability in this study are explored in the next chapter.

3.4.4 Validity - SECTION WAS RELOCATED

Non-quantitative research tends to raise questions of the validity of such research. Within the context of this study validity speaks to the credibility and dependability of the research process; and speaks specifically to the link between the situation being studied and the researcher’s account (Flick 2002). Validity has its origins in quantitative research and therefore cannot be applied in the same way to qualitative research but it is important that tests of validity be applied to qualitative research.

Maxwell (2002, pg. 37), while discussing the subject of validity, noted that if qualitative studies cannot consistently produce valid results, then policies, programmes, or predictions based on these studies cannot be relied on. Maxwell (2002) further gave a realist approach to

validity by viewing it from a different perspective; by considering the relationship of items the research is intended to account for as opposed to the procedures used to produce the account. Maxwell was supported in his view by Norris (1983) and Hammersley (1992). Maxwell (2002) stated that qualitative research can be evaluated using five types of validity. These types are; descriptive, interpretive, theoretical, generalisability and evaluative validity. Each type of validity addresses issues that arise in the debate on quantitative versus qualitative research.

Merriam (1998, pg. 202) stated that in qualitative research "reality is holistic, multidimensional and ever-changing." Thus the researcher, in addition to the study participants, must attempt to build validity into the different phases of the study from the data collection phase through to data analysis and interpretation. Therefore, Burns (1999, pg. 160) stressed that "validity is an essential criterion for evaluating the quality and acceptability of research." Within the context of mixed method research a variety of instruments are generally used to collect data, thus the quality of these instruments is critical in ensuring that "the conclusions researchers draw are based on the information they obtain using these instruments" (Fraenkel & Wallen, 2003, pg. 158). Thus, it is imperative that both the data and the instruments used are validated.

The objective of this study with respect to validity based on the previous discussion was to engage in a piece of work that captured the data in a way that facilitated the respondents' account and through systematic analysis produce an account that was a true reflection of the respondent's intent. During the data collection phase once the interviews and focus group were transcribed, the respondents were given the opportunity to verify the accuracy of their accounts.

3.5 Defining the Population

A population refers to all the elements that meet the criteria for inclusion in a study, or the entire group of persons or objects that meet the criteria that the researcher would like to investigate (Brink et al. 2012: p.131; Burns and Grove 2009: p. 42). For the purpose of this study four populations were identified; 6 tutors from the Department of Nursing at BCC which is 25% of the faculty, 74 final year students in the Associate Degree in general nursing,

80 graduates of the BCC general nursing programme, and 9 final year students who agreed to take part in the focus group discussion.

3.5.1 Sample - SECTION WAS RELOCATED

Brink et al., (2006: p.124) stated that a sample is a subset or a part of a whole and is made up of units of analysis from a defined population. Studying the sample enables the researcher to better understand the full population from which the sample was selected and thus allows the researcher to be in a better position to explain some facets of that population (De Vos et al. 2008: p. 194). The previous authors indicated that there are several reasons for selecting samples in qualitative research. These reasons included the consideration that using the whole sample may be costly, more accurate information could be obtained through the use of a small or representative sample, and more in-depth information could be obtained since the focus would be on a selected sample as opposed to the whole.

All final year BCC general nursing students were invited to participate in the study. The sample of participants was drawn from the Nursing Department of the BCC where the final year students were enrolled, while the graduate were employed by the Queen Elizabeth Hospital, and other health care facilities both public and private such as the Bayview Hospital, Polyclinics, District Hospitals, and FMH (Frank, Michael, Holder) Emergency Medical Clinic. This type of sample was selected primarily because of the available numbers of possible cohorts to be interviewed.
The sample frame (N=154), comprised final year nursing students who were in the process of completing their Associate Degree in General Nursing at BCC, while simultaneously preparing to write the RENR (N=74), and graduates of the BCC programme who had already written and were successful in the RENR (N=80).

The 74 final year students who participated in the study ranged in ages from19 to 59 years. Of this sample, there were 7 males and 67 females. The graduates involved in the study ranged in age from 20 to 59 years and consisted of 20 males and 60 females. All final year students were enrolled on a full time basis at the BCC, as the programme is not currently structured for part time delivery. It should be noted that a higher percentage of males

participated in the graduates' survey, and this was not predetermined, but was as a consequence of persons who were available and willing to participate in the survey.

The final year students were selected as opposed to the first or second year students, as they would have been in a more advantageous position to share their experiences and make suggestions for system improvements based on their personal experiences. Additionally, these students would have completed all of their nursing courses, and would have had extensive clinical exposure. Hence they were asked to indicate what they considered to be the positive and negative aspects of their training, in addition to what facilitated or hindered their learning in the college and the quality of their clinical experiences. It must be noted that the sampling was purposive and not random based on the availability and willingness of students to participate. Additionally, the population of available students was quite small making it more difficult to randomise the sample.

The involvement of the graduates of the BCC programme was more challenging than that of the final year students. The graduates were dispersed across the health care institutions in the island, and were expected to be scheduled on different shifts over the 24 hour period, making it difficult to contact them. Thus, the researcher solicited the assistance of three clinical instructors from the BCC to administer the questionnaires to the graduates. The clinical instructors were invited to seek the participation of the graduates as they were in daily contact with them while in the clinical area. The clinical instructors were verbally and individually informed of the purpose of the study and the expected outcomes, and given the opportunity to seek clarification on any areas of concern.

The instructors were also informed of the ethical considerations that needed to be adhered to, in order to ensure that all participants were made aware of the conditions attached to their involvement in the study. A total of 100 questionnaires were distributed to the graduates at the Queen Elizabeth Hospital, the Geriatric Hospitals, the Psychiatric Hospital, FMH Medical Centre and selected polyclinics. Of the 100 questionnaires disbursed, 80 were completed and returned to the instructors, as the participants were allowed to take away the questionnaires if they were unable to complete them on the spot. This cohort was selected as they would have been in an excellent position to report on how their training impacted on their level of success in the RENR examination with reference to their time in the college and during their clinical

attachments, as well as their ability to function as competent registered nurses. Table 3.1 below shows the study groups and the types of data generated by each group.

Table 3.1 Data collecting information

	Faculty	Focus group	Questionnaire Final year student	Questionnaire graduate
No. of participants	**6**	**9**	**74**	**80**
Quantitative			**√**	**√**
Qualitative	**√**	**√**	**√**	**√**

3.6 Pilot Study

A pilot study is defined as a study that is conducted on a smaller scale, using a smaller sample of the population with the intention of refining the methodology and the research question prior to the commencement of the main study. Burns and Grove (2009: p. 54), and Polit & Beck (2008: p. 213) referred to a pilot study as a trial run or a small version of the proposed study, conducted to test methods that will be used in the main study. It is conducted to determine how feasible the main study will be and also to detect possible loopholes in the proposed study methodology.

The pilot study may also be used to assess the validity of the questions (Saunders et al. 2003), which refers to the degree to which it measures what it is supposed to measure (Pallant 2005). Additionally, it allows suggestions to be made on the structure of the questionnaire which would assist with the establishment of content validity (Mitchell 1996, cited by Saunders et al. 2005) and allows for amendments prior to its testing.

The pilot study was conducted in the same manner as the actual study in that the researcher used similar participants, the same setting and the same data and analysis technique as outlined by Burns and Grove, 2009. The researcher was afforded an opportunity to recruit participants for the pilot study. This was due to the fact that the head of the Nursing Department had convened a meeting with the final year students to discuss their preparation for the upcoming RENR examination. The study consisted of a sample of 12 final year students out of a possible population of 80. The number selected was intended to represent approximately 20% of the possible number of students, but only 12 students agreed to take

part in the pilot study. The students, who volunteered, were asked to meet with the researcher at the end of the meeting to discuss what process to be employed in conducting the pilot, and to arrange a mutually agreed time and place for the administering of the questionnaire. During the discussion on the conduct of the pilot students were informed that they could indicate any suggestions they may have in relation to the structure, length, questions, or content of the questionnaire.

The nature of the research was further explained to the students, and they were allowed to ask questions about the study and their involvement in the study. The questionnaires were distributed to the students after a period of discussion, during which all concerns were addressed. The sample of graduates was obtained by a random selection of the names of graduates from different graduation classes during the period 2005 to 2012. These individuals were contacted until 12 persons had confirmed their willingness to participate in the study. This number was derived to keep the sample in concert with the number of final year students who had agreed to take part in the pilot study. The researcher then made arrangements to meet with them and to administer the questionnaires. This pilot took a longer time to arrange as the researcher had to find a time that was convenient to all 12 participants as they were invited to meet with the researcher at BCC. These participants were also advised that they could make recommendations for any changes they deemed necessary. Upon completion of the pilot, the 24 questionnaires were assessed to determine if the questions were appropriately designed to solicit the information which was required to answer the research questions, and to make any necessary changes to the instruments. The questions appeared to have performed well, and the only change which was made was in terms of changing the tense of the questions in the graduate questionnaire to reflect the past tense since they would have already completed the RENR.

3.7 The Questionnaire

The questionnaire survey is a useful method of data collection in research studies. Brink and Wood (1998, pg. 293-298) have stated that questionnaires have the following characteristics: each participant enters his/her responses on the questionnaire, saving the researcher time, it is less expensive than conducting personal interviews, and respondents believe that the process is anonymous; hence they are free to express themselves in their own words without fear of

being identified. The questionnaire also allows a wide range of data to be collected in a limited time period and its format is standard and not affected by the disposition of the interviewer. Having reviewed the literature in terms of the types of data collecting instruments which are used in research, it is the aforementioned factors that influenced my selection of the questionnaires used for this study.

Additionally, the management of time was an important factor and the questionnaire gives the respondents time to think about the questions, it affords them the opportunity to answer the questionnaire at a convenient time and if necessary, refer to documents or personal records (Blumberg et.al 2005). Another important reason guiding my selection is the fact that the questionnaire can be used for qualitative as well as quantitative data collection. If there are open-ended questions, then qualitative methods can be used for data analysis. If the questionnaire consists of closed-ended questions, then a quantitative approach may be adopted (Dudovskiy 2015).

The use of both open-ended and closed-ended questions has advantages and disadvantages. Seliger and Shohamy (1989) contended that closed-ended questionnaires are more efficient because they are easier to analyse. Gillham (2000, pg. 5) however argues that "open questions can lead to a greater level of discovery," although he agrees that it is difficult to analyze open-ended questionnaires. More importantly, the issue in open-ended questions is that the responses to these types of "questions will more accurately reflect what the respondent wants to say" (Nunan, 1999, pg. 143). Thus, a questionnaire which includes both closed-ended and open-ended questions will allow for a more complementary and holistic approach. The need to delve deeper into the experiences of the participants was primarily responsible for my use of some open-ended questions in the survey.

Foddy (1993) expressed the concern that when questionnaires are used the researcher must take into consideration the cultural context in which the questions are presented since this may impact the way in which the respondents interpret and answer the questions. It must be noted that, the questionnaire was administered in a familiar context to ensure that the respondents were engaged in surroundings in which they remained comfortable and free of distractions.

Two questionnaires consisting of 21 items were distributed and were self-administered. These questionnaires were constructed by the researcher after the initial review of the literature. Thus some of the questions were designed to obtain data on factors such as age, gender, previous experience as discussed in the literature. These questions formed part of the demographic data requested of the participants. The participants' perception on other factors such as the assessment methods utilized in the programme and the role of the clinical environment in their preparation for the RENR were also included as questions on both questionnaires. Additionally, some of the questions were designed as a result of the information received from the first two interviews that were conducted. Each questionnaire consisted of open-ended as well as close-ended questions, although the majority was closed-ended with 15 of the 21 questions being closed-ended for both questionnaires. The selection of more closed-ended as opposed to opened ended questions was based on the fact that closed-ended questions are easier to analyse and provided respondents with some structure to their answers; it also made it easier for the researcher to compare the views of the varying groups of respondents (Gray 2005).

While items on both questionnaires were similar as they related to the demographics, such as age, gender, and qualifications, changes were made relative to those questions which were geared towards preparation for the writing of the RENR and the expectations of the final year students. In the case of the graduates the questions were written in the past tense as they would have completed the RENR examination. The variables measured in the questionnaires are seen in Appendix B.

3.8 Qualitative Phase

The qualitative phase of this study employed the use of six interviews of faculty in the Department of Nursing, and a focus group of nine final year students. Qualitative data was also obtained from the questionnaires through the open-ended questions.

3.8.1 Interviews

During the second phase of the study, 6 structured interviews were conducted in order to collect detailed views from the respondents, as well as to assist with the explanation of results from the initial quantitative survey (Cresswell 2009). This process provided an opportunity

to probe answers where the researcher wanted the interviewees to explain or build on their responses (Saunders 2003).

The interview process involved six tutors and clinical instructors who had a range of experiences and qualifications. The backgrounds of the tutors placed them in an excellent position to provide the necessary qualitative data to supplement the data gathered from the questionnaires and focus group. These persons were carefully selected based on the level of exposure they would have had to the students, thus they were able to provide a comprehensive overview of their opinions as they relate to the activities which they perceive have the potential to affect the students in their preparation for and their subsequent performance in the RENR.

Careful consideration was given to the selection of the interviewees, based on their involvement in the preparation of the students to write the RENR. Four of the interviewees, though currently tutors, were graduates of the BCC nursing programme, while one tutor had her basic nursing training in Canada, and the other tutor was trained in the United Kingdom. One of the tutors was intimately involved in the administration of the RENR, as she served as the chairman for the examination committee for the Nursing Council of Barbados which is the agency in Barbados responsible for the administration of the RENR. Given her involvement in the process, which also included the preparation of questions for the RENR, this interviewee was therefore in a position to give the perspective of a tutor, as well as provide information on the performance of students in the RENR based on her experience working with the RENR process. Participants were selected, because of their level of experience in working with several cohorts of nursing students over the years. It was therefore hoped that the information gained would be of immense importance relative to the strengths and weaknesses of the BCC programme, and how it may be affecting the students' performance in the RENR examination.

Additionally, three of the tutors who were involved in the interview process were able to provide another perspective on the performance of the students in the RENR and the overall role that the Nursing Department at the BCC is playing since they teach the theory courses, and can give a different perspective from the clinical instructors. One of these three tutors has been involved in the correction of the RENR examinations, and therefore was able to

have a fairly good view of the students' performance and factors which may affect their performance. The involvement of some of the tutors in the RENR process should afford them the opportunity to identify some of the weaknesses and strengths of the candidates in the RENR, based on actual information generated by the examination process and their exposure to such information.

The other three interviewees were Clinical Instructors with responsibility for the delivery and assessment of the clinical aspects of the training programme and who were also involved in the correction of the RENR. These interviewees interacted with the students in the clinical area on a daily basis and were responsible for teaching the various clinical skills which are assessed in two of the four RENR examination papers. These participants were also responsible for the assessment of the clinical skills taught to the students, as well as their determination of the students' level of clinical competence.

The development of the questions used in the interviews and the focus group were also influenced by the initial literature review, however, many of the questions were also developed based on some of the day to day experiences of the researcher in terms of some of the concerns raised by staff, students, graduates and stakeholders. While the literature review did not reveal any significant information in relation to the RENR examination, a review of some of the data from the Nursing Council showed that there was some disparity in the performance of candidates on the various papers which comprise the examination. Hence some of the questions included in the faculty interviews sought to solicit information on the performance of the candidates in the various papers, and possible reasons for their performance in the papers.

Hence the information gathered from the interviewees would serve to provide a complete profile of the students throughout their programme of study at the BCC, including their level of preparation not only for the writing of the RENR but also ability to become quality registered nurses. The information generated from these interviews, in addition to the other data generated, should provide a credible basis for the building of sound recommendations for improvements in the delivery of nursing education at BCC and the improved performance of the students in their first sitting of the RENR.

3.8.2 Focus Group

Krueger (1994: 6) states that focus groups entail carefully planned discussions designed to obtain perceptions on a defined area of interest in a relaxed, non-threatening environment. It also involves the interactions of about 5 to 15 people whose opinions and experiences are requested simultaneously (Brink et al., 2006: 152). The final activity for the generation of qualitative data was therefore that of the student focus group. Nine final year students readily agreed to be part of the focus group to discuss their perception of their preparation for the writing of the RENR by the Department of Nursing at the BCC. Nine students were involved in the focus group which consisted of three males and six females.

Focus group interviews in qualitative research allow participants to express their reality whilst describing people in their natural settings where their environment, input, ideas and disclosures are encouraged, and the environment in which this happens is conducive and nurturing (Lewis, 2000). Some participants might feel intimidated when interviewed individually hence the group dynamics and interaction which are produced by focus groups tend to minimise the feeling of isolation (Burns and Grove, 2009: 513). The idea of engaging a focus group is that the group will interact freely, share thoughts and ideas, which would otherwise not be possible if other methods of data collection were used (Burns and Grove, 2009: 513). The focus group was convened in keeping with the ideas previously expressed. It followed the protocol listed in Appendix C. During the focus group session the students were asked to address areas in relation to the research questions, and were allowed to answer even when another student had already given an answer. This therefore allowed for the saturation of ideas.

Initially, the researcher intended to have a focus group of five, but as additional persons volunteered they were all accepted. The focus group was conducted similarly to the interviews and the interviewer had a limited number of pre-prepared questions. Prior to the start of the group activity the students were contacted via email and cell phone to confirm the time, date and location of the focus group session. The agreed time was 3:10 pm, after they had completed their final class for the day, and it was agreed that the session would not go beyond 4:30pm. The room assigned was a class room on the third floor, where there would be little or no interruptions by other students.

The protocol for the conduct of the focus group was shared with the participants and they were allowed to give their input. The researcher indicated the need to audiotape the session so that there could be accurate reporting of all that was said, and asked the participants if they had any objections to being taped. The participants were given the assurance that their identities would not be revealed when reporting the findings of the group activity, and they were assured of strict rules. After all the ground rules were established, and the researcher had verified that all nine participants were comfortable and willing to proceed, then the session started officially at 3:20pm.

A schedule of questions was used to guide the discussion (Appendix C) but when the participants were diverging, the researcher gently and tactfully brought them back to the focus of the interview. The focus group questions were designed similarly to those for the faculty interviews but were not as intense. Some of the questions included their perception on factors such as leaching and learning, assessment and the effect of the clinical environment on their ability to receive appropriate clinical experiences which could then be translated in their ability to transfer their knowledge and experiences into the types of answers they were likely to give in their clinical papers in the RENR. The focus group session ended at 4:40pm and the participants were thanked for their willingness to participate, and were reassured of the confidential nature of the information they shared.

3.9 Data Collection Process - The Interview

The interviews, as mentioned previously were semi-structured. However, even though there was a schedule of questions to be asked of all interviewees, the interview process allowed the participants to share views which were not necessarily in keeping with the types of questions being asked by the interviewer. There were instances where interviewees wanted to share concerns which were outside of the interview process, where they felt that they needed to get the concerns off their “chest”. This was allowed by the interviewer, but such comments which were outside of the scope of the research were not included in the official transcripts.

Wass and Wells (1994) cited by Saunders (2003) agree that semi-structured or in-depth interviews can be used to validate findings from the use of questionnaires. However,

Saunders (2003) believes that the lack of standardisation of semi-structured or in-depth interviews may lead to issues of reliability. As previously stated, the interview process was structured, but there was allowance made for the discussion of some issues outside of the scope of the discussion.

The interviews and focus group session were audio-taped, and then transcribed by the researcher. Notes were also taken by the interviewer during the process to supplement the audio-tapes. Factual information in terms of the time, date, place, and code names for participants was recorded to be used when the coding was being conducted.

Interviews have some specific purpose, so it is necessary to store the responses in a relevant, usable, and accessible form to fulfill this purpose (Gorden 1992). According to Gorden (1992), "everyone who uses the results of interviews, whether quantitative or not, needs some way to code the results so that they can be used without listening to the whole tape or reading the whole transcript". While there may not always be a need to listen to the entire tape, this researcher found it necessary to listen to and transcribe the full contents of the interviews and focus group session. These transcripts were then analysed for common themes which appeared in the various interviews. While the researcher was particularly interested in common emerging themes, single points which were considered salient to the research were also noted.

3.10 Coding Process for the Results of Interviews

Coding is the process of reading carefully through the transcribed data, line by line, and dividing it into meaningful analytical units. Tesch (cited in Botma et al., 2010: p. 224) recommended eight steps of the data coding process. The first of these steps involved getting a sense of the whole by reading all the transcripts carefully.

In the process of coding the transcribed data all the steps as identified by Tesch (cited in Botma et al., 2010: p. 224) were not followed. However, after the interviews were transcribed, they were analysed for emerging themes which were noted and the data was grouped under those general themes. For example, when the participants spoke of issues related to the curriculum they were all place in a section of the matrix document under the

theme curriculum. If the contribution dealt with assessment, or teaching methodology, then representative sections of the transcript were placed under the relevant sections. Each of the identified themes was allocated a number and all contributions under each theme were coded with the same number, and redundant information was eliminated.

Upon completion of the analysis of all transcripts, the various categories were further analysed to determine if sub themes could have been identified, and hence the data was further subdivided. For example, under the theme time management, that was subdivided into themes such as student management of time, or whether enough time was allocated by BCC for the delivery of certain aspects of the training. Once all categories were further analysed, there was a cross referencing of the transcripts to determine if there was a measure of consensus among the participants. However, where salient points were made by single participants, those points were given due consideration. This was then followed by the process of interpreting the data with the main objective of drawing conclusions which would be triangulated with the other data sources.

3.11 Interviewee and Interviewer Bias

According to (Saunders et al.,2003) interviewee bias stems from the comments, tone or non-verbal behaviour of the interviewer which creates bias in the way that the interviewee responds to questions being asked or how the interviewer attempts to impose their own beliefs and frame of reference through the questions they ask. Thus to avoid these sources of bias, preparation and readiness for the interview is essential.

In relation to the interviews conducted, each interviewee was contacted by the researcher who gave the prospective interviewee a synopsis of the research being conducted and the objectives of the research. They were given the opportunity to decide whether they were interested in being a participant in the process, given that they are tutors in the nursing programme who are involved in the preparation of the students for the RENR examination. This process was followed because the interviewer is the immediate supervisor of the interviewees who work as tutors and clinical instructors in the Department of Nursing which is headed by the researcher.

Once the prospective interviewees accepted the invitation to participate in the interview, they were advised by the interviewer that they could refuse to answer any questions asked and that at any time during the interview they were free to indicate that they no longer wanted to continue the interview. Additionally they were advised that all of the information collected would be held in the strictest confidence, and would be coded to protect their identity. The same process as previously outlined was employed with the students for the focus group and they were assured that the information recorded would not be shared with the staff in the Department of Nursing, and would be used only for the purpose of the research. Permission was sought from both staff and students to tape the interviews and there was unanimous verbal consent. The recording of the information provided by the interviewee was also of major importance, as it provided a mechanism for the accurate retrieval of the information provided.

Despite the accurate retrieval of the information, Easterby-Smith et al. (2002) states that bias can also be demonstrated due to the way in which responses are interpreted. Therefore to minimise this occurrence and to overcome any issues that may arise in the quality of data, the interviewer focused on asking questions that were not pre-suppositional or loaded but were geared towards eliciting the answers that were relevant to the study. Where a question was not understood, explanations were given with inflection to encourage exploration of a point, without offering a view or judgment on the part of the interviewer (Saunders et al., 2003). Hence the interviewer was conscious of her approach to questioning and the impact of her own behaviour during the interview, as well as displaying a high degree of listening skills (Saunders et al., 2003).

Of considerable importance is the view of Saunders, et al. (2003), who argued that if the interviewer is unable to develop the trust of the interviewee, or the credibility of the interviewer appears to be lacking, then the value of the information given may be limited and cause doubts about not only validity but also reliability. As a consequence of the need to develop a good relationship with the interviewee, care was taken at the outset of the interview to create a warm and cordial atmosphere to allay any fears or remove any discomforts experienced by the participants. Thus while most of the participants for the qualitative phase of the study were willing to participate, there was some reluctance by some participants to respond fully to some questions. This behaviour is consistent with the views of Saunders et

al (2003) who pointed out that participants may be unwilling to divulge information which they may deem sensitive to themselves and for which the interviewer is probing at a deeper level. It must be noted that as the researcher I was the manager of some of the respondents and to a degree this may have influenced their willingness to be open or their reluctance to divulge information which they felt was privileged.

3.12 Ethical Issues

The engagement of participants in the study requires the researcher to adhere to established ethical standards in relation to the execution of the study. Areas to be addressed in order to ensure that ethical behaviour underpins the study included informed consent of the participants, permission to use the institution as the place of study, clear explanation of the purpose of the research to the participants, confidentiality, reporting and feedback and conflict of interest. As the researcher in charge of the study I was cognisant of the need to ensure that the study adhered to ethical standards. To this end the following steps were taken.

To ensure informed consent both the tutors and the students were asked to participate in the study only after they had been given adequate information about the study and had acceded to the request. The researcher solicited the assistance of three clinical instructors to administer the questionnaires to the graduates. However, the questionnaires for the final year students, the student focus group and the interviews of the tutors were conducted by the researcher.

Prior to engaging the participants, a letter requesting permission to engage both staff and students in the study was sent to the Principal of BCC and permission was granted to engage in the study(refer to Appendix A). While permission was officially obtained to engage in the study, the researcher subsequently spoke with the participants to explain the nature of the study and to share the details of their involvement, should they so choose. While an open invitation was advanced to the students by the researcher, not all students agreed to participate in the study.

The accurate retrieval of data can be facilitated through the audio taping of the session. As a consequence participants were asked if they were willing to have the session audio-taped. Participants were informed that it would assist the researcher in reproducing an accurate

account of the proceedings which would be transcribed, forwarded to them for verification and or clarification purposes. They were also informed that the tapes of the interviews would be stored in a secure location, and that they would be coded to ensure confidentiality of the data.

The participants were also informed that participation was voluntary and they had the right to discontinue their participation if they felt uncomfortable or did not wish to continue with the interview. Given that the focus group and the interviews were face to face and conducted by the researcher it was understood that the researcher would be aware of who made some comments, however assurances were given that all information gathered would have been treated in strict confidence

3.13 Data Analysis

A mixed methodology approach was used for this research which resulted in a variance in the methods of analysis. The quantitative data from the questionnaires were analysed using the Statistical Package for Social Sciences (SPSS). This resulted in the use of various processes and equations to facilitate a clear analysis of the data. The SPSS program eliminated the need to process the questionnaires manually. There were two cohorts that completed questionnaires and the data generated were exposed to statistical analysis and involved the cross tabulation of several variables. One of the aims of this comparative analysis was to determine if there was a difference in the way in which graduates of the BCC nursing programme answered some questions in comparison to the final year students, and if so, what were the possible implications of those differences. In analysing the data, consideration was given to whether there were differences in the first time performance of the students in the RENR examination based on factors such as age, gender, and grade point averages.

In relation to the analysis of the qualitative data, the interviews and focus group responses were analysed to determine points of consensus and differences, and to gain vital information in terms of what were the possible factors which influenced first time performance of nursing students in the RENR. The opportunity was also provided for the analysis of the data to extract information which may be used to form the basis of the recommendations for any

changes in the training and assessment of students thus leading to improved student performance in the RENR examination.

The analysis of the data generated was carefully considered to ensure that the discussion on the data was relevant, and that the conclusions and recommendations were in keeping with what was expressed by the participants, and the aims and objectives of the study. To this end, the drawing and verifying of conclusions followed an outline of some of the tactics outlined by Miles and Huberman (1994).

The tactics for generating meaning of the data includes: noting patterns and themes, making contrasts/comparisons, noting relations between variables, and building a logical chain of evidence. The tactics for testing or confirming the findings include: checking for representativeness, checking for researcher effects, weighing the evidence, and ruling out spurious relation. These methods were used in conjunction with other methods previously identified to ensure that the research questions proposed were adequately answered.

3.14 Limitations and Strengths of the Methodology

3.14.1 The Quantitative Phase

The limitations experienced during the quantitative phase of the study were as follows:

1. Incomplete responses for some of the open-ended questions in both questionnaires.
2. The omission of some questions on the questionnaires by the participants.
3. In the case of the graduates, all persons did not complete and return their questionnaire.
4. The unavailability of statistical data on the performance of candidates from some of the islands that administer the RENR.
5. Incomplete records from the local Nursing Council.

The strengths experienced during the quantitative phase of the study were as follows:

1. The use of the questionnaire allowed for greater participation in the research process since more persons were involved in the questionnaire activity than in the interview process.
2. The data generated by the questionnaires can be easily analysed using SPSS.

3. The students were not intimidated as could occur when interviews are conducted.

3.14.2 The Qualitative Phase

The limitations encountered in the qualitative phase of the study were as follows:

1. There was a degree of caution exhibited by some of the interviewees in their responses, even though the interviewer had sought to reduce this factor, by assuring them that the interview was being conducted for research purposes only.

2. The employer: employee relationship of the researcher to the faculty which may have resulted in the interviewees not being as forthright in their discourse as they could have been. This could mean that the information provided by these individuals may not be as detailed as it could been. It was therefore very important that I as a researcher allayed the fears of the participants and reiterated the confidential nature of the study and the steps that were taken to ensure that the information gathered would be only used for the purpose of the research project and would be destroyed upon completion of the study.

3. It must be mentioned that the researcher is Head of the Division from which many of the participants in the study were drawn. She is therefore intimately involved with them either as staff or students. As the immediate supervisor of the staff, and the one who conducts their annual performance appraisals there may have been some hesitancy on the part of some faculty to speak frankly. This could be due to them fearing victimisation, or they may not want to speak directly to some issues if it appears that their colleagues may be implicated in practices that may be deemed less desirable. Additionally, the students may have some reservations in relation to being frank and open in their discussions.

The strengths of the qualitative approach were as follows:

1. The researcher was fortunate to have a captive pool of nursing students from which the participants could have been drawn. The BCC nursing students were therefore readily available for inclusion in the study.

2. The willingness of faculty of the BCC nursing programme to participate in the research, as they were of the view that the research would produce valuable recommendations for an improved curriculum and improved performance of the students in the RENR examination.
3. Minimal cost for the production of the questionnaires.

3.15 Reflexivity and Trustworthiness

Having completed the literature review and discussed the methodology used for this study, it is important to reflect on what I have done in a critical way in order to determine if a more appropriate approach could have been utilized for this study. One area of concern is that of the construction of the two questionnaires. While the questions on both questionnaires were closely aligned to allow for greater triangulation of data, the use of primarily Likert scores would have provided greater opportunity for quantitative analysis of the data. Additionally, I believe that if I had used a standard questionnaire that had been tried and tested, it would have provided a greater opportunity for comparative analysis.

Another area that I would have approached differently is that of the gathering of data from other nursing schools in the Caribbean whose students also write the RENR. This would have allowed for better comparison in terms of performance and student demographics. It would perhaps have been useful to have used a questionnaire for heads of nursing schools in the Caribbean to access similar demographic data from their students and then compare the data to the BCC students in terms of performance in the RENR. However, the inability to gain access to data on student performance in the RENR from other CARICOM countries was a major challenge which led to the inability to compare the performances of a variety of similar student cohorts.

Further reflection is on my role as the sole researcher, and also the manager of the participants in the study, and how this had the potential to affect the trustworthiness of the study. Guba and Lincoln (1985) are cited by Morse (2002) as stating that within the context of reliability when conducting qualitative research, criteria should be used which includes credibility, transferability, dependability, and conformability. Considering my role as manager, the data gathered from the interviews was consistent across interviews, thus it is my

belief that my role as manager did not influence participants to respond differently. Additionally, it is my belief that the data generated is transferable and can be used in other nursing schools in the Caribbean, and is also dependable. As a means of creating an atmosphere of ease, the interviews were not conducted in my office, but were instead conducted in the conference room where the atmosphere was more relaxed and less imposing. However, on reflection, I think I could have employed someone to conduct the interviews and focus group session as a means of removing all doubt of my possible influence on the participants in the study. While I have my own interest in the outcomes of this study, the participants were equally interested in the outcome of the study which will be shared with them upon completion, and this should have some positive impact on the trustworthiness of the study.

3.16 Conclusion

The research methodology described in this third chapter guided the researcher through the study which examined the perceptions of the tutors, student nurses and graduates of the BCC nursing programme in relation to factors that influence the performance of the BCC nursing students in the RENR examination. The research process was carefully followed to ensure that there was minimal interference from any possible biases or other limitations. The focus group interviews proved an ideal method of data collection to supplement the faculty interviews and the questionnaires, thus addressing the purpose of the study. The ethical requirements were considered and applied as stipulated. It is therefore the researcher's view that the research process was properly executed. The following chapter will detail the results of the study and its supporting analysis.

4.0 CHAPTER 4 DATA ANALYSIS

4.1 Introduction

This chapter provides a detailed representation and analysis of the results of the qualitative data that was collected along with the supporting analysis and descriptive statistics that will provide a picture of the research landscape. The quantitative data were analysed using SPSS, while the qualitative data were coded and compared with the other data generated from secondary sources such as the Nursing Council and the office of Student Affairs at BCC. This analysis was undertaken, in an attempt to determine the factors which may have an impact on the performance of the students in the RENR examination through answering the main research question which states:

What are the factors which contribute to student performance in the Regional Examination for Nurse Registration (RENR) among nursing students in the BCC nursing programme?

This main question is then supported by the following questions which were identified as being important to the study, to assist in providing information on the factors which influence the performance of the students in the RENR. These questions are as follows:

1. *What were the students'/graduates' perceptions of the factors which affect their success in the RENR?*
2. *To what extent do the GPA scores predict student success in the RENR?*
3. *Is there a relationship between the age and gender demographics and the performance of the students on the RENR examination?*
4. *Which of the four RENR examination papers do students experience the greatest difficulty and why?*

The analysis of the qualitative data sought to identify factors which may have impacted the students' performance in the RENR. The interviews were analysed using a coding methodology which identified common themes which were present in the interviews, and similarly for the student focus group. These themes will be compared with the quantitative data to determine whether there were common themes emerging from both the quantitative and qualitative data sets.

This analysis is important, as documented reports of the RENR over the past 6 years have revealed that there are a number of graduates from the BCC's Associate Degree in General

nursing, who have failed the RENR licensure examination on their first sitting. This is of concern as an important measure of success for the nursing programme.
Also of concern, is the fact that the success of the graduates in the RENR determines the number of persons who are qualified to enter the health care system and this is of concern to all stakeholders as it has implications for the return on the investment in the education of the students. This has further implications for the healthcare system and the society as a whole, since failure to register the practice also limits the pool of health care professionals who can be employed.

The presentation of the results will be dealt with under the main themes which emerged from the data collected from the questionnaires, focus group and the interviews, and will seek to identify likely factors which may have affected the performance of the students in the RENR examination.

4.2 Gender

The analysis of the data reveals that there is no significant difference in the performance of males or females at the 95% significant level. The total number of males included in the data set from the Nursing Council was thirty five (35) or 9.6% of the sample, and the number of females was three hundred and thirty one (331) or 90.4%. This disparity in gender was consistent with the imbalance noticed across the nursing profession locally, regionally and internationally, and is consistent with the annual enrollment of nursing students at BCC. The gender distribution for the final year students involved in this study was seven males and 67 females and for the graduates it was 20 males and 60 females. In the case of the graduates this ratio of males to females represented a disparity simply because of who was willing at the time to participate in the study.
Table 4.1 gives a comparison of the performance of males versus females on their first attempt at the RENR.

Table 4.1 Gender Attempt1 Cross tabulation

			Pass on First Attempt		
			Yes	N0	Total
Sex	M	Count	15	20	35
		% within Sex	42.9%	57.1%	100.0%
	F	Count	174	156	330
		% within Sex	52.7%	47.3%	100.0%
Total		Count	189	176	365
		% within Sex	51.8%	48.2%	100.0%

In examining the results in relation to the demographic factor of gender (see Table 4.2 below); it was found that when the results for 2007 in relation to gender were closely examined it is clear that regardless of gender, there is a higher likelihood for a student to have failed the RENR on their first attempt than to have passed. In 2008, there was a complete turnaround in the fortunes of the students where 60% of the males passed the RENR on their first attempt and 66.7% of the females did the same. This shows a marked change for 2007 where students were more likely to fail than pass, however there remained no significant gender differences in pass rates from year to year. As males increased the success rating, so too did the females.

In 2009 however, there was a return to the trends highlighted in 2007 where greater proportions of students failed the RENR on their first attempt. While the difference between those females who passed and those who failed, narrowed noticeably, the overarching trend being highlighted was the increased likelihood for failure in the 2009 examination. As aforementioned, the significantly smaller proportion of males who enroll in the programme compared to the females was always likely to produce disparity in the male pass and fail rates as seen in 2009 where two out of every three males who took the RENR on their first attempt, failed.

Conversely in 2010, 75% of all males who took the examination passed compared with 71% of females. It was also revealed that there was a level of consistency which emerged in the pass and failure rates of both male and females from 2010 – 2011 as 68% of the males passed on the first attempt and 65% of the females were able to achieve the same. In the following

year, 2012, the results indicated a reversal of the scores from 2011 and as such a higher proportion of males (67%) failed, while 67.4% of the females also failed. Table 4.2 below shows the distribution of the performance of the students based on gender for the period 2007 – 2012.

Table 4.2 Cross tabulation of gender distribution of performance on first attempt at the RENR

				Attempt_1		
				Attempt_1		
Year				Y	N	Total
2007	Sex	M	Count	1	6	7
			% within Sex	14.3%	85.7%	100.0%
		F	Count	23	37	60
			% within Sex	38.3%	61.7%	100.0%
	Total		Count	24	43	67
			% within Sex	35.8%	64.2%	100.0%
2008	Sex	M	Count	3	2	5
			% within Sex	60.0%	40.0%	100.0%
		F	Count	26	13	39
			% within Sex	66.7%	33.3%	100.0%
	Total		Count	29	15	44
			% within Sex	65.9%	34.1%	100.0%
2009	Sex	M	Count	2	5	7
			% within Sex	28.6%	71.4%	100.0%
		F	Count	32	38	70
			% within Sex	45.7%	54.3%	100.0%
	Total		Count	34	43	77
			% within Sex	44.2%	55.8%	100.0%
2010	Sex	M	Count	3	1	4
			% within Sex	75.0%	25.0%	100.0%
		F	Count	39	16	55
			% within Sex	70.9%	29.1%	100.0%
	Total		Count	42	17	59
			% within Sex	71.2%	28.8%	100.0%
2011	Sex	M	Count	4	2	6
			% within Sex	66.7%	33.3%	100.0%
		F	Count	39	21	60
			% within Sex	65.0%	35.0%	100.0%
	Total		Count	43	23	66
			% within Sex	65.2%	34.8%	100.0%
2012	Sex	M	Count	2	4	6
			% within Sex	33.3%	66.7%	100.0%
		F	Count	15	31	46
			% within Sex	32.6%	67.4%	100.0%
	Total		Count	17	35	52
			% within Sex	32.7%	67.3%	100.0%
Total	Sex	M	Count	15	20	35
			% within Sex	42.9%	57.1%	100.0%
		F	Count	174	156	330

	% within Sex	52.7%	47.3%	100.0%
Total	Count	189	176	365
	% within Sex	51.8%	48.2%	100.0%

In relation to gender, the disparity showed that there was a greater percentage of females than males writing the RENR however, the main disparities were seen in 2007 and 2009. The data for the other years demonstrated that there was very little difference in the performance of the males compared with the females.

4.3 Age

The demographic factor of age was examined to determine whether there was any association with performance of the students in the RENR examination. Age was considered from the perspective of the persons involved in the study and also with reference to the data obtained from the Nursing Council in relation to performance for the period 2007 to 2012 which looked at the performance of the students in their three attempts at the RENR. Table 4.3 below shows the number of students in the data set from the Nursing Council represented by four age group categories.

Table 4.3 Number of persons in each age category writing the RENR during the period 2007-2012

Age Category	Number of persons	Percentage
19-29	197	53.8
30-39	89	24.3
40-49	60	16.4
50-59	20	5.5

An age category cross tabulation (see Table 4.4 below) was done on the data for the 2007 to 2012 and the results showed that there was an overall increase in the number of persons in the 19 – 29 age group writing the RENR in 2007 with a spike in the year 2010. Table 4.3 demonstrates the distribution of the number of students over the six year period, and by the four age categories identified who have written the RENR.

Table 4.4 Year Age category Cross tabulation

			Age category				
			19 - 29	30 - 39	40 - 49	50 - 59	Total
Year	2007	Count	31	16	16	4	67
		% within Year	46.3%	23.9%	23.9%	6.0%	100.0%
	2008	Count	20	17	7	1	45
		% within Year	44.4%	37.8%	15.6%	2.2%	100.0%
	2009	Count	43	19	12	3	77
		% within Year	55.8%	24.7%	15.6%	3.9%	100.0%
	2010	Count	41	10	6	2	59
		% within Year	69.5%	16.9%	10.2%	3.4%	100.0%
	2011	Count	34	12	11	9	66
		% within Year	51.5%	18.2%	16.7%	13.6%	100.0%
	2012	Count	28	15	8	1	52
		% within Year	53.8%	28.8%	15.4%	1.9%	100.0%
Total		Count	197	89	60	20	366
			53.8%	24.3%	16.4%	5.5%	10% within Year 0.0%

For the questionnaires however, the average age of the participants was 31.3 years, the mode was 23 years, and the range was 19 -58. This age range was therefore used to determine the four age categories used in this study using 10-year intervals. Table 4.5 below shows the first time performance of the students in the different age categories after a cross tabulation was done.

Table 4.5 Age category Attempt1 Cross tabulation

			Pass on First Attempt		
			Y	N	Total
Age_category	19 - 29	Count	105	92	197
		% within Age_category	53.3%	46.7%	100.0%
	30 - 39	Count	52	36	88
		% within Age_category	59.1%	40.9%	100.0%
	40 - 49	Count	25	35	60
		% within Age_category	41.7%	58.3%	100.0%
	50 - 59	Count	7	13	20
		% within Age_category	35.0%	65.0%	100.0%
Total		Count	189	176	365
		% within Age_category	51.8%	48.2%	100.0%

An overall assessment of the cumulative performance of all age groups over the six year period being examined showed that the 30 – 39 years age group was more likely to pass on their first attempt at the RENR (59.1%) as compared to the 19 -29 years age group (53.3%) and the 40 – 49years age group (41.7%). This result is not surprising as this group represents students who are at the stage where they are either seeking a career or making a career change. Given that the females form the greater percentage of the student population; these students are generally females who are trying to make life better for themselves and their families. This may result in a greater level of seriousness and commitment to their studies, which is translated in their success in the RENR. It should be noted that the performance of the 50 -59 years age group was not significant in the overall discussion of the performance of the various age groups simply because the actual number of persons writing the RENR were small in comparison to the other groups.

However, the 2007 results in relation to age showed the absence of any significant differences with respect to age. The same obtained for 2008 to 2012 where the $p>0.05$ in each case. Analysis of the statistics showed that in 2007 persons between the age 19-29 years were less likely to fail and as such had a failure rate of (58.1%) compared to those in the 30-39 age group who had a failure rate of (62.5%), and those between the 40-49 age group, or the 50-59 who had the joint highest rate of failure at (75%) each.

The results of 2009 showed that the 19-29 age group was less likely to pass (44.2%), than the 30-39 age group (52.6%), however, the 19-29 age group performed slightly better than the 40-49 (41.7) age group. In the year 2010, the 19-29 age group performed similarly to the 40 49 group with percentages of 68.3% and 66.7% respectively.

The 30-39 age group performed better than the other groups with a pass rate of 90.0%. In 2011 there was a similar distribution as for 2010 where the 19-29 years age group again performed similar to the 40-49 age group with pass rates of 61.8% and 63.6% respectively. The 30-39 age group again performed better than the other groups having attained a pass rate of 91.7%. In 2012, there was an overall decline in the pass rates. The 19-29 age group had a pass rate of 35.7%, the 30-39 age group had 40.0%, and there were no first time passes for the 40-49 age group.

The results in Table 4.5 above show the performance of the students on their first sitting of the RENR. However the results by age categories reveal that the overall pass rates for each year were very similar to that of the 19 – 29 years age group as shown in the Table 4.6 below.

Table 4.6 Comparison of the overall pass rate to that of the 19 to 29 age group

Year	Pass rate for 19 -29-year group	Overall pass rate
2007	41.9	35.8
2008	70.0	65.9
2009	44.9	44.2
2010	68.3	71.2
2011	68.1	65.2
2012	35.7	32.7

The discussion in the preceding sections 4.2 and 4.3 analysed gender and age respectively. It was expected that there would have been a relationship between gender and age with respect to performance in the RENR but this relationship has not been shown to be significant. Tables 4.7a and 4.7b show these results.

Table 4.7a First RENR Attempt Cross tabulation By Gender

Count

		Attempt_1		
		Did not Pass on First Attempt	Passed on First Attempt	Total
Sex	F	156	174	330
	M	20	15	35
Total		176	189	365

Table 4.7b First RENR Attempt Cross tabulation By Age

Count

		Attempt_1		
		Did not Pass on First Attempt	Passed on First Attempt	Total
Age category	19 - 29	92	105	197
	30 - 39	36	52	88
	40 - 49	35	25	60
	50 - 59	13	7	20
Total		176	189	365

4.4 Grade Point Average (GPA)

The cumulative grade point average is used as a measure of the students' success in the associate degree. In relation to this study the role of the GPA was evaluated based on the secondary data obtained from the Nursing Council and the BCC on the performance of the students in the period 2007 - 2012.

The grade point average was one of the demographic factors that was considered by similar studies cited by Sayles, Shelton, & Powell (2003), investigating the predictive factors that are associated with performance of students in the licensure examination. In this study, the GPA and success in the sitting of the RENR was considered for a cohort of 366 students. The results of this evaluation showed that there is some association between the student GPA and the possibility of being successful in the RENR. Table 4.8 below gives a summary of the data found in Appendix F, and shows the GPA ranges and the success of the students in the RENR. Table 4.8 shows that a greater number of students with a higher average GPA were more successful on the first sitting of the RENR examination than those with a lower GPA.

Table 4.8 Relationship between GPA and success in the RENR

Number of students	Success sitting	GPA Range	Average GPA
40	1st	2.40 – 3.66	2.97
16	2nd	2.54 – 3.71	2.91
10	3rd	2.43 – 2.85	2.61

Of the 66 students in this cohort 40 of them were successful in the RENR on their first attempt. Using a GPA of 3.0 as was used by Rollant (2006), the number of persons passing on their first attempt 16/40 would have received a GPA of 3.0 or greater when compared to 6/16 of the persons on the second attempt, and none of the persons who passed on the third attempt had achieved a GPA of 3.0, or greater. This result is not necessarily indicative of the GPA being a good predictor of student success in the RENR examination, since there is no significant difference in the GPAs of persons passing on the first attempt compared to the second attempt due to the overlapping GPA ranges.

While several similar studies which sought to determine the factors which are predictive of the performance of students in the nursing licensure examinations focused on a wide range of demographics, this study focused primarily on age, gender, and GPAs, simply because there

is a relatively homogenous population of students in the nursing programme at the BCC. There is no difference in terms of ethnicity of the students, therefore exploration of this demographic factor was not considered necessary for inclusion in this study.
The questionnaires provided an opportunity for the researcher to determine if there was a measure of consensus on areas such as teaching and learning, the clinical programme and preparation for the RENR. Thus Table 4.9 gives a comparison of key areas from the two questionnaires and whether there was consensus. (See Appendix G for full listing)

Table 4.9 Comparison of areas of agreement between graduates and students from the questionnaires

Areas of concern	Final year students	Graduates
Programme meet expectations	86.5%	86.5%
Teaching is acceptable	87.8%	80.4%
Curriculum is balanced	86.5%	78.1%
Subject matter is relevant to RENR	71.6%	80.6%
More can be done by BCC to prepare the students for the RENR	100.0%	74.1%
Testing methods are adequate	48.6%	84.6%
Comprehensive exam should be re-instituted	97.3%	61.4%

While Table 4.9 speaks to common areas on the questionnaires, there was the concern on the questionnaire for the final year students with respect to the amount of preparation time given to the students (24.3% indicated that the time was insufficient) for the RENR. There was definite agreement by the final year students that adequate time was not given to prepare for the examination. In relation to the Table 4.9 above, there is definite consensus among both groups of respondents, with the exception of the areas dealing with the testing methods, the re-introduction of the comprehensive examination, and BCC being able to do more for the students in preparation for the RENR.

What was clear from the analysis of the data from the questionnaires for both students and graduates is that there was general consensus in relation to the nursing programme meeting the expectations of the respondents, the teaching methodology being acceptable, and the balance of the curriculum. It was however clear that all final year students were of the view that BCC could do more to prepare them for the RENR. This was contrasted to 74.1% of the graduates who felt that BCC could do more. This is therefore a factor to be considered when making recommendations as a result of this study.

4.5 Performance of BCC students in the RENR examination

In relation to performance on the first attempt and subsequent attempts at the RENR over a six year period (2007-2012), one hundred and eighty nine (189) or 51.6% of the students were successful on their first attempt while one hundred and seventy six (176) or 48.1% were unsuccessful. However, a careful examination of the performance of the students in their two subsequent chances was also considered and the results are shown in Table 4.10.

Table 4.10 Success of students in RENR examination

Year	1st attempt	2nd attempt	3rd attempt	Total number
2007	24(36%)	26(39%)	17(25%)	67
2008	29(64%)	13(29%)	3(7%)	45
2009	34(44%)	27(35%)	16(21%)	77
2010	42(61%)	11(16%)	6(23%)	69
2011	43(64%)	14(21%)	9(15%)	67
2012	17(33%)	19(37%)	16(30%)	52

4.6 Analysis of Qualitative Data from Questionnaires, Interviews and Focus Group

Analysis of the pass rates of the RENR led to discussion by the staff of the Nursing Department of the BCC and subsequent discussions pointed to a number of possible reasons why the results of the performance of the students in the RENR examination were not as expected. It was suggested that a number of factors were responsible. This led to the development of this study to determine the possible reasons for the student performance using a variety of research methods to identify what these problems were. The data generated would have been in response to the questions asked by the interviewer, or on the questionnaires completed by both the final year students and the graduates of the programme.

In order to identify the themes of the interviews, the focus group and the open-ended questions from the questionnaires, the researcher examined the transcripts for emerging themes. As the themes emerged from the transcripts of the interviews they were recorded and grouped as general themes. As each transcript was examined, quotes from the participants were listed under the general themes. Once all transcripts were analysed, the general themes were then further divided into sub-themes, and the researcher identified points of consensus. The same method was also followed for the focus group transcript, and the themes identified

were then compared to those identified in the interviews as a means of determining whether the emerging themes were similar or divergent. Some of the general themes identified are included in Table 4.11 below.

Table 4.11 Themes from Interviews of Faculty and Students

Clinical Programme
Curriculum
Teaching and Learning
Student Performance in RENR
Internal and external factors affecting student performance
Student workload
Preparation for RENR
Miscellaneous social problems affecting students
Time management

These themes along with several others were further divided into sub-themes such as; the curriculum structure, the clinical programme, factors affecting student performance (including social problems of students), student assessment, and the performance of students in the various RENR examination papers. The themes were mentioned by both faculty and students and will be examined to determine whether there is consensus of ideas. As a means of clearly identifying the sources of the quotes the following identifiers were used. **Faculty were identified using the letters A to F, while the students from the focus group were identified using the numbers 1 to 9. Quotes from the open-ended questions by the final year students were identified by FY, and the graduates 'GRAD'**.

The following is an account of the important themes identified, accompanied by supporting quotations from the participants.

4.6.1 Theme – Curriculum

All participants expressed the view that the curriculum had an impact on the preparation of the students for the RENR. The general theme of curriculum was divided into a number of sub-themes. With respect to the themes as listed in Figure 4.11 the general view was that some courses needed to be amalgamated, the curriculum needed to be aligned with the RENR examination, there should be a balance between theory and practice, the curriculum should be

flexible, and the content should be rationalised to improve the curriculum of the nursing programme and thus improve the performance of the students in the RENR.
The following, Figure 4.1 shows the general theme of curriculum in the centre, surrounded by the sub-themes that were identified.

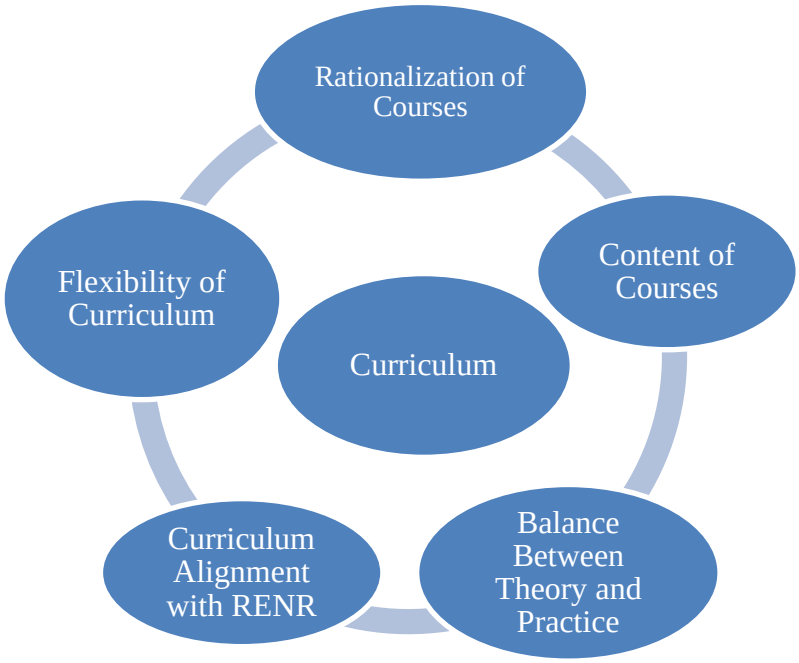

Figure 4.1 Curriculum Theme and Sub-themes

4.6.1.1 Sub-theme – Curriculum's alignment with the RENR

In order for students to be adequately prepared for the RENR, it is expected that the curriculum should follow the nursing blue print. One interviewee confirmed that the alignment of the curriculum is important and stated:

> *"The curriculum plays a big part because if your curriculum is not consistent with the RENR you are shooting in the dark."* (Interviewee A)

4.6.1.2 Curriculum restructuring

The restructuring of the curriculum was mentioned in terms of the difficulty some students experience in relation to balancing their studies and their personal commitments. Thus in seeking to establish a possible way of reducing the difficulties experienced by some students it was stated that:

> "*We will have to look at restructuring our curriculum where some of our courses can be delivered in the evening."* (*Interviewee* A)

The adjustment of the curriculum was also discussed in terms of the amount of work the students were required to cover at any one time. Of interest was the suggestion by four of the interviewees that the workload was too heavy for some students. They subsequently proposed a rationale for the number of courses taught in each semester and hence the need for the amalgamation of some of these courses. This position was supported by interviewees B, D, E and F. Additionally the students from the focus group also expressed their opinions on the structure of the curriculum and were in agreement with the faculty in terms of the amalgamation of some courses.

> *"I think some of the courses can be amalgamated, because you find yourself reading the same information at times, so there is overlapping material. If you look at this programme it should really be four years, but it is crammed into three years, using the summers to make up the time."*(Student 8)

This position was also supported by another student from the focus group who said:

> *"I think this course has been restructured and restructured, so a lot of things have become redundant. Some of the courses can be amalgamated."*(Student 1)

4.6.1.3 Suitability of Curriculum

In relation to the suitability of the curriculum, four (4) of the interviewees were of the view that the curriculum was generally suitable for the preparation of the students for the RENR. One interviewee stated that:

> "*The curriculum has served me well, and when we compare it to Jamaica and Trinidad, the curriculum is basically the same. What their students are being taught our students are being taught."* (Interviewee A)

This view was supported by other participants.

The import of this statement is that there is consistency of curriculum across the Caribbean. Additionally the similarity ensures that there is a consistency in the quality of nurses who can work freely in CARICOM countries under the CSME regulation that gives qualified and skilled workers freedom of movement.

4.6.1.4 Curriculum content

Two of the six interviewees commented on the curriculum content and were generally of the view that the content was good even though some of the courses could be merged. During the interview one person posited that the curriculum can be adjusted by merging selected courses in order to create a linear and better organised programme.

> "*Even though the content it is good, it is packed. There are some courses within the curriculum that can be merged."* (Interviewee D)

This position was also supported by the students in the focus group where one student said:

> *"I think some of the courses can be amalgamated, because you find yourself reading the same information several times, so there is overlapping material."* (Student 4)

Additionally, both the graduates and the final year students made some comments in relation to the curriculum content in the open ended questions and were of the opinion that*:*

> *"The nursing programme was too compact and some of the subjects were not taught properly by some tutors"* (FY)

4.6.1.5 Flexibility of curriculum

The flexibility of the curriculum was mentioned by an Interviewee in relation to the workload and the ability of the students to be able to work and study.

> "*I also think that there are some courses that can be offered part time to ease the coursework load. It will also help those students with financial difficulties that need to work."* (Interviewee D)

4.6.2 Theme - Student assessment and Evaluation

The account of the interviewees with respect to student assessment suggests that the respondents were in agreement that assessment was critical and impacted on the ability of the students to perform in the RENR.

A sample of the comments made by the various participants is highlighted below in the following quotations from the interviews.

> "*I believe we are suffering from not questioning them at a particular level. When they are done, even if we decide that we are going to give them MCQ's as our evaluative method, at the end of our period with them and they go out there and write a report, what are they going to write in the report that is going to reflect the professional nurse, if all they ever have to do is to circle a letter?"* (Interviewee C)

Another faculty member spoke to the clinical assessment and shared the view that they were doing a good job, and stated that:

> *"Clinically we use a variety of strategies to evaluate the students, and again with the introduction of the continuous assessment, we have added the skills lab where they can do return demonstrations."* (Interviewee D)

This method of assessment is consistent with the constructivist method of assessment.

Another interviewee in giving support for the type of assessment reported the following:

> *"I know for sure that people who are involved with the RENR exam try to structure their exams as is done for the RENR, but I can't speak for across the board."* (Interviewee E)

However, one student from the focus group was not of the opinion that they were not given enough exposure to be thoroughly assessed. The student said:

> *"We need the tutors to use the models to give us demonstrations. The models are there but they don't use them."* (Student 3)

This theme received much attention from most interviewees, and is an area of concern in terms of whether or not this is a possible factor in the performance of the students in the RENR.

> "*We are failing; we need to make sure that we assess our students using all the modalities, all the different types, essays and structured questions."* (Interviewee C)

All interviewees commented on the curriculum and these comments were analysed in order to determine whether or not the curriculum was a contributing factor to student performance in the RENR.

The comments made on the curriculum did not only include the participants of the interviews and the focus group, but students who had completed the questionnaires also took the opportunity to make some qualitative statements about the curriculum through the open-ended questions. Some of the comments obtained from the students and graduates who completed questionnaires.

4.6.3 Theme – Clinicals

The next theme to be considered is that of the clinicals. It should be noted that the most frequent response in relation to the clinical programme is that there is a need for more clinical time. This idea was shared by all groups of participants and appears to be a contributing factor to the performance of the students in the RENR.

The effectiveness of the clinical programme was an area that captured the attention of participants in both the focus group and the faculty interviews. During one of the faculty interviews the following question was asked:

> "*Are the students getting the opportunities to get the clinical experiences to develop those competencies in order to transfer that clinical experience into theoretical experience that will help them in the exam setting?"* (Interviewee A)

This concern was also raised by the students who stated that:

> "*There is also too much wasted time, e.g. when you go to the clinical area and there is no one there to supervise you".* (Student 1)

Another student stated that*:*

> *"Sometimes it feels like an environment to make us fail instead of to succeed. When you go sometimes you get that attitude from the nurses and you feel out of place."* (Student 3)

Additionally, one of the questionnaire respondents stated that*:*

> "*Clinical time was too short and inadequate supervision was given in the clinical area."* (GRAD)

Further analysis revealed that a number of factors impact on the efficacy of the clinical programme as noted by the students. These factors are shown in Figure 4.2 below.

Figure 4.2 Themes on the clinical experience

4.6.3.1 Clinical experience

All participants were of the view that the clinical setting was a possible factor in the performance of the students in the RENR. Interviewee 'A' posited that since some of the papers are clinically based, the clinical experience would therefore have an effect on the performance of the students.

> "*Are the students getting the opportunities to get the clinical experiences to develop those competencies in order to transfer that clinical experience into theoretical experience that will help them in the exam setting? This is another factor you have to look at."* (Interviewee A)

On the other hand another interviewee suggested that there were not enough opportunities to evaluate student competence. This position is stated in the following quote:

> *"There are not enough opportunities to evaluate whether the student is building the competence in a particular area. They should be given the opportunity to repeat an experience, and then someone evaluates the student to point out their mistakes and then they are given the opportunity to do the remediation".* (Interviewee E)

4.6.3.2 Partnerships with the Clinical Sites

The BCC has a working agreement with the organizations which provide the clinical attachments since they are generally government run institutions. As a consequence they are considered to be our valuable stakeholders. However, the staff in the various institutions is not as cooperative as they should be and that sometimes results in the students not receiving adequate supervision from the staff. This is an area of concern for both staff and students.

> "*I think we need to have a partnership with the hospital where their staff is required to work with the students; also the students must understand that they must work with the hospital staff."* (Interviewee F)

In supporting this position said that a student from the focus group stated:

> "S*ometimes you go on the ward and there are too many students, and sometime when you go with your objectives, the nurses would say that they are short of staff and they just want you to do what they want you to do, ignoring your objectives."* (Student 3)

4.6.3.3 Scheduling of Clinicals

This was also an area of concern for both faculty and students who were of the view that the clinical schedule was too intense.

> *"I think that the extended clinical period is pressing the students right up until close to exams and I think that we can restructure that somewhat".* (Interviewee B)

4.6.4 RENR Examination

The discussion on the RENR plays a major role in the success of the students. The structure of the exam and preparation of the students for the exam are all key components of their performance. A measure of concern was raised in relation to the structure of the exam and the students' ability to be successful by making the following comment:

> *"People are always looking at the college but what about the RENR? Is something wrong with their structuring of the questions? Do the questions compare with what is happening in the clinical setting?"* (Interviewee A)

This position was further supported by another faculty member who stated that:

"We also have to look at the RENR. Look at the questions, are they testing the students fairly." (Interviewee D)

4.6.4.1 RENR paper with the highest failure rate

The RENR examination is composed of four papers, each of which the student is required to be successful in. It is therefore possible for a student to perform well in three papers but receive a failing grade due to poor performance in one paper. The exploration of the paper(s) with the poorest performance is of importance as a possible factor in the performance of the students since two of the papers are objective type papers and the other two are subjective.

In an attempt to determine the success of the students in each paper the faculty were asked during the interview to give their perception of the RENR paper which gives the students the greatest difficulty. There was consensus among the interviewees, relative to which paper(s) appeared to have the highest failure rate. Three tutors identified Paper 3 as the one which seemed to have the poorest performance; however two tutors while not stating Paper 3, indicated that essay writing was a problem for a large proportion of the students, and Paper 3 is an essay paper.

The interviewer also asked the interviewees to suggest reasons for this poor performance. The main reason given was that some students found difficulty expressing themselves in writing, and this was evident in the results of the essay papers. It was quite evident that there was general consensus in relation to which of the four papers had the lowest pass rate.

In an attempt to triangulate the information gathered from the interviews, data were also obtained from the Nursing Council of Barbados in relation to the percentage pass rate in the four RENR examination papers. The data from the Council were compiled for the years 1996, 1999, 2000, 2001, 2007, 2008, 2009, and 2012.

Based on the data contained in Table 4.12 below, Paper 3 of the RENR, showed an overall lower pass rate when compared to the other papers. Of the set of 12 exam results, Paper 3 has the lowest pass rate in 50% of the cases. The data also showed that when the pass rate in Paper 3 was low, the overall pass rate was also low in most cases. Careful observation of the

data in Table 4.12 also indicated that Paper 1 also gave students difficulty as was seen in April 1999, April 2007, and April 2012, where the pass mark for those papers was 50% or less. It should be noted that Papers 1 and 3 are the essay papers, whereas Papers 2 and 4 consist of objective type questions.

Table 4.12 Percentage pass rates in the four RENR papers

Year	Paper 1 % pass	Paper 2 % pass	Paper 3 % pass	Paper 4 % pass	Overall % pass rate
1996-April	89	100	85	100	84
1999-April	53	78	83	93	51
1999-October	64	100	25	77	37
2000 – October	77	71	74	75	53
2001 – April	62	97	66	79	45
2007 – April	50	55.5	67	75	55
2008 – April	71	83	65	88	65
2008 – October	69	86	59	92	51
2009 – April	80	56	63	100	68
2009 – April	93	81	46	95	40
2012 – April	24	68	87	100	48
2012 – October	77	92	39	97	45

Additionally, an evaluation of the data from the graduates' questionnaires showed that the paper with the greatest frequency of failure is Paper 3, which is an essay paper. An analysis of the data submitted by the graduates on their questionnaire showed that 55.6% of all persons responding failed Paper 3.

The general consensus was that most students fail the clinical based papers, and this was identified by one interviewee who said that

> *"My concern is the amount of students failing the functional paper and seems to be the area where Barbadians students tend to fall down a lot with the functional paper."* (Interviewee B)

This was further supported by the following comment:

> *"There has been some improvement but you still have that paper 3 that is always a problem."* (Interviewee D)

4.6.4.2 Performance of BCC students in the RENR

The discussion on the performance of the BCC students in the RENR is responsible for the engagement in this study since there is a need for the acquisition of research data on this problem.

. This is a concern for faculty, students and all other stakeholders.

> *"There needs to be a proper statistical analysis of the situation but we can't do it without the data. My take on the RENR is different than most persons because at the end of the day most of our graduates do pass the exam, so it depends on what you are looking at. So for the first sitting where most persons look at the performance, but 90%-95% of our graduates end up passing the exam."* (Interviewee A)

There are several mitigating factors must be taken into account when determining whether the performance of the BCC students is below average. The performance of students in the RENR was a theme highlighted by the tutors of the BCC nursing programme. The comments mentioned areas such as: the level of preparation of the students, the performance of the students in the four individual RENR papers, their perception of the overall performance of the students and whether the students' success should be based only on the first time writing of the RENR, or based on their subsequent passing of the examination irrespective of the sitting at which they are successful. The comments made by the interviewees though varied, together provided a fairly wide perspective of how the performance of the students should be viewed.

The discussion on the performance of the BCC students in the RENR which has attracted much national and institutional attention must be viewed within a particular context as suggested by interviewee 'A'. While there was extreme difficulty in acquiring pass rates for countries that write the RENR, results from Belize were acquired and provide some limited means of comparison with Barbados (Table 4.13). As a result, an overall comparison could not be made as to whether the Barbados performance was similar to the regional average.

Table 4.13 Comparison of pass rates Belize vs Barbados (2007-2010) in the RENR

Year	Barbados	Belize
October 2007	55%	0%
April 2008	65%	42.8%
October 2008	51%	18.5%
April 2009	68%	68.9%
October 2009	40%	6.2%
April 2010	52%	10.3%

The results in Table 4.13 show that Barbados has performed consistently better than Belize, with the exception of April 2009 where both countries recorded the same percentage pass rate. It is however important to note that the number of students from Belize writing the RENR ranged from 14 to 32, whereas for Barbados the average number of students writing the examination is usually 75.

4.6.4.3 Tutorial support

In any educational institution the role of tutorial support is integral to student performance and success. In discussing this theme one faculty member stated that:

> *"Well, I just feel that we need to have tutorials for the students. We need to have a structure where the students are scheduled for tutorials with particular tutors at specified times so that if the student does not understand something, they can go to the tutors for help."* (Interviewee D)

The students in the focus group also were also of the view that tutorial support was necessary.

> *"There should be tutorial sessions throughout the programme, not only in preparation for the RENR. There should also be review classes."* (Student 1)

This position was also supported by another student who stated that they needed tutors to facilitate passing exams by better helping them to apply knowledge to practice.

4.6.4.4 Factors affecting student performance

The factors affecting student performance in the RENR was varied and included a number of sub-themes as highlighted by faculty, students and graduates.

4.6.4.4.1 Social Factors

Three interviewees were of the opinion that there were social factors which affected the performance of the students. This position was also supported by interviewees 'D' and 'F'.

> *"Look at the social dynamics, look at the demographics of our students, the average age, a good few of them have children, there are also a lot of them who are not sponsored and have the financial burden of full time study."* (Interviewee A)

> *"There are other issues, social issues like family dynamics, issues from way back, and when the pressure starts to get them they don't know how to cope with their situations."* (Interviewee F)

4.6.4.4.2 Student attitude

Student attitude was a factor which was suggested as a possible factor which affects student performance.

> *"Attitude is definitely an issue because sometimes you wonder why the student chose this profession. So attitude is definitely a problem."* (Interviewee E)

This position was also supported by interviewee 'D', who stated that this is an area which is not easily measured.

4.6.4.4.3 Class size

The concern was expressed that the large class sizes is a factor in student performance since it is generally difficult to give the weaker students the kind of assistance that they require.

> *"Give us smaller numbers to work with, which is one of the things we need to do. If you had smaller groups sometimes you can pick up those weaker students."* (Interviewee E)

4.6.4.4.4 Student Selection

Student selection is an area that occasionally attracts attention when discussing student performance. Two interviewees expressed this view and stated that in their experience there are students who are struggling with six subjects per semester and this may be attributed to

their entry qualifications, which may be indicative of how they are likely to perform in the programme.

4.6.4.4.5 Concurrent theory and practice

The BCC programme is built on the premise that there should be concurrent theory and practice to ensure that students are able to translate what they learn in theory to what they do in practice. This point was well supported by an interviewee who stated that:

> *"I think also that it would help if when the theory is taught that they can be exposed to the patients in keeping with what was taught so that they could bring the theory and practice together in their minds."* (Interviewee F)

4.6.4.4.6 Teaching Methodology

Respondents across the various forms of data collection were in agreement that this is an important factor affecting the students' success in the RENR.

Comments were made on this sub-theme by interviewee 'A' who advanced that tutorial staff needs to ensure that their methodology is consistent with the seriousness of what is imparted and it must be consistent with the curriculum.

In the open ended questions of the questionnaires students made the following comments:

> *"Some tutors were excellent; some however need to revisit their methods of teaching and its effects on students."* (FY)

> *"Too much emphasis is placed on theory and not enough on clinical, because nursing is a very practical profession needing competency in skills"* (GRAD)

> *"Different techniques from different tutors made students confused; it was more challenging than expected"* (GRAD)

One student in expressing an opinion on the teaching methodology stated that

> *"Sometimes when the tutors come to teach they would say, you should know this and you should know that, but if you don't know, you don't know, so instead of trying to help you, they are trying to bring you down."* (FY)

Another student stated that the different teaching styles of the various tutors are very confusing for the students and they believe that it impacts their learning.

4.6.4.4.7 Miscellaneous Factors Affecting Student Performance in the RENR

Further discussion on the analysis of the factors affecting the performance of students in the RENR shows that there was a group of miscellaneous comments which while not forming part of the major themes are equally important when combined as factors affecting student performance in the RENR. These included themes such as internal, external and social factors which were reported as having an impact on the students' performance in the RENR. The comments on these miscellaneous factors were advanced by all participants in this study and together provide insight for the development of strategies aimed at improving the general performance of the students. Table 4.14 below gives a sample of the comments from the focus group under the divisions of internal vs external factors.

Table 4.14 Focus group comments on internal vs external factors affecting student performance

Internal factors	External factors
"College exam structure and care plan"	"Balancing work, school and home"
Having time to prepare and study for the regional exam	Most persons who enter the programme are matured adults with families. It is very difficult to be running a household and studying at the same time.
Not having enough study time prior to exam to prepare; overloaded with unnecessary course projects	We need preceptors in the clinical area
Preparation time is decreased because of either too much clinicals/theory	Requirements of the RENR
Students need tutors to facilitate passing exams by better helping them to apply knowledge to practice.	The clinical experience should be improved
Too many projects and not enough time to learn the work. I would recommend staying with specific topics/subjects and explain how they relate to the general nursing course	
Tutorial sessions should be scheduled for all students	

These factors, as advanced by the various participants, indicate that care must be taken in the delivery of the curriculum to ensure that the content has been rationalised in such a way that it is manageable to the average student. Additionally, concerns have been expressed in

relation to the clinical aspects of the programme which would require an improved structure and greater coordination and control of the clinical aspects so that students can receive maximum benefit from the clinical programme. This would not only ensure that the students upon graduation would not only be "fit for practice", but will be better able to translate their practical experience into the writing of RENR, thus improving their overall performance in the examination. Much of the discussion by all participants of the study speaks to the general management of time with regards to both the students and the faculty.

The graduates and final year students also had an opportunity to advance some comments on the factors which their perceived would have had an impact on their performance in the RENR examination through the open-ended questions on the questionnaires. Examples of these comments made by these two groups in relation to their perception of factors which may affect their performance are displayed in figure 4.3 below.

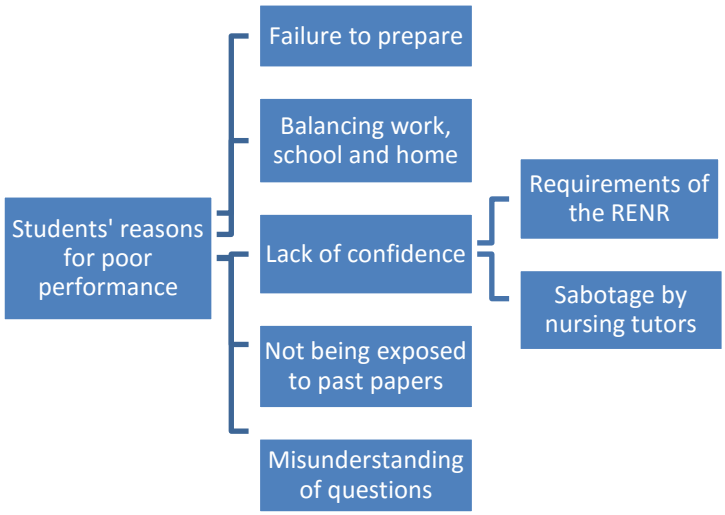

Figure 4.3 Factors Affecting Student Performance as Cited by the Questionnaire Respondents

While the above data speaks directly to the comments made by the participants of the interviews and the student focus group, the questionnaires also produced qualitative data which were congruent with the comments advanced, such as the failure of the student to adequately prepare for the examination and lack of confidence. It should be noted that of all the comments made by the students the most frequent comments were: lack of preparation time (12) and inadequate preparation by the students (11).

4.7 Conclusion

The results outlined in this chapter will form the basis for the recommendations made in the final chapter. The data generated by the questionnaires, focus group, interviews and other secondary data were discussed and triangulated to ensure that the findings of this study are consistent with what was expressed by the participants, and to determine whether the findings of this study provided the answers to the research questions, and whether the findings were consistent with similar studies. Therefore, the factors which have the potential to affect the performance of the BCC students in the RENR were highlighted.

CHAPTER 5 DISCUSSION AND RECOMMENDATIONS

5.0 Introduction

The previous chapters described the study which was conducted at the Barbados Community College using a mixed methods approach. A series of interviews were conducted along with a focus group discussion. Additionally, the two questionnaires were also employed as a means of generating further data to answer the associated research questions which guided this study. The primary reason for conducting the study was to identify and examine factors which were considered to be predictive of the performance of the BCC nursing students in the RENR licensure examination. This chapter thus provides a discussion of the findings and their significance, limitations of the study, conclusions and personal reflections, implications for the improved delivery of nursing education in Barbados, and recommendations for further research.

Therefore the overarching research question of the study was:

> ***What are the factors which contribute to student performance in the Regional Examination for Nurse Registration (RENR) among nursing students in the BCC nursing programme?***

Supporting questions were also identified as being important to the study, to assist in providing information on the factors which influence the performance of the students in the RENR. These questions are as follows:

1. *What were the students'/graduates' perceptions of the factors which affect their success in the RENR?*
2. *To what extent do the GPA scores predict student success in the RENR?*
3. *Is there a relationship between the age and gender demographics and the performance of the students on the RENR?*
4. *Which of the four RENR examination papers do students experience the greatest difficulty?*

5.1 Findings of the study

This study was designed to explore and identify factors which have the potential to affect the performance of nursing students from the BCC in the RENR and their ability to be successful

on their first sitting. This study explored whether there were any predictive relationships among academic and demographic factors affecting the nursing students who were enrolled in the Associate Degree in General Nursing and who were eligible to write the RENR. The perceptions of a sample of graduates and faculty were also acquired in relation to the factors which may affect the performance of the students in the RENR, to ensure completeness of the data generated.

Additionally, an important comparison was made with those factors cited by Reid (2000), as reasons for the performance of the students in the inaugural RENR, with the current students to determine if the factors are the same or whether changes have occurred.

5.2. Strengths of the study

In each piece of research there are inherent strengths. One of the greatest strengths in this research was the fact that the researcher was a member of faculty of the Barbados Community College and as such had easy access to faculty and students. Additionally, as an administrator it was also easier to receive the ethical clearance necessary to undertake the study at the institution. This facilitation of the data gathering exercise was as a result of the administrators recognising the potential of the results from the research and its implications for the development of the Nursing Department and its students, and the resultant improved the pass rate in the RENR.

The use of the questionnaires also allowed for wider participation in the research process as this provided a greater expanse of data than if a single methodology was utilised. This methodology therefore allowed for a larger cross section of participation and the sharing of comments on the topics of interest. Additionally, conducting interviews with the faculty also provided strength for the research as tutors were available on campus daily, thus making it easier to work around their schedules in order to conduct the interviews.

The willingness of faculty in the Nursing Department to participate in the research can be considered a strength of the study as the faculty was of the view that the research would produce valuable information in terms of the preparation of the students and their ultimate improved performance in the RENR.

5.3. Limitations of the Study

Whenever research is being conducted limitations will be experienced. This research study was no different and a number of limitations presented themselves. One of the major limitations of this study was the unavailability of data on the performance of students from across the Caribbean in the RENR examination. While this examination is a common examination done by nursing students from various CARICOM islands there is no central repository for the examination results. Each island stores its own results which are heavily guarded.

As a consequence of attempting to retrieve data from the various islands for the past three years, I was faced with not being able to compare the performance of the BCC students with the students of the other islands where the RENR was done. This information would have been vitally important as it would have supported the results of this study either to confirm or deny whether or not the performance of the Barbadian students was any different from the other students who take the RENR. In addition to this, while the Nursing Council of Barbados was quite willing to facilitate the requests for data, the records were incomplete in some cases, thus limiting the conclusions that could have been drawn from a larger data set.

In relation to the questionnaire, one of the limitations experienced was the fact that there were some incomplete responses, which may not have been as prominent as with an interview. The missing data thus prevented the opportunity to establish consensus on some areas which may have been of importance**.**

In relation to the interviewing process, it was evident that there was a level of caution exhibited by some of the interviewees even though the interviewer had sought to reduce this factor, by assuring them that the interview was being done for research purposes only and that the information collected would not be divulged to other administrators or to their colleagues. The fact that I am in a managerial role was indeed a limitation as faculty may have been concerned that their comments could be of detriment to themselves or their colleagues, thus they may have exercised some caution when responding to some questions.

This was not a major problem with the focus group as most of the students were very eager to speak. However, in the case of the focus group some students were quite vocal, and sought to answer most of the questions themselves. This was however mitigated by the interviewer consistently asking if other persons had comments to make and allowing them to give their opinions. The limitations identified above are the major ones experienced and the researcher tried to ensure that the effects of these limitations were minimal.

5.4. Discussion of the Results

In discussing the results I will seek to follow the outline used in Chapter 4 and to provide the answers for the research questions that were investigated. A comparison of the factors that were possible predictors of student performance in the RENR were compared to those posited by Reid (2000) where she identified a number of factors which were responsible for the performance of the students in the inaugural RENR. These included: the non-integration approach to curriculum delivery, poor quality classroom teaching, poor quality clinical supervision, the monitoring and evaluation of students in the clinical area, and the poor knowledge base of the students.

From the study, the major factors identified include inadequacy of teaching as noted by the students and poor clinical supervision which were also mentioned by Reid (2000) as causes for the poor performance of the students in the inaugural RENR. In relation to the teaching of the programme, the graduates and final year students expressed concern with regards to the teaching and its suitability to prepare them for the RENR. This was also mentioned by faculty during the interviews, as well as by the students in the focus group. The study also uncovered additional factors which include the lack of tutorial sessions, imbalance between theory and clinical practice, and the curriculum as some of the major themes.

Of note was the emphasis placed on the social factors which were identified as possible impactors on the performance of the students in the RENR. Some of these factors include financial considerations, family commitments, the need for some students to work while studying, and the general amount of time required for the programme. These factors will be discussed in subsequent sections of this chapter.

5.4.1 Demographics

The supporting questions which guided this research included demographic factors such as age, gender, and GPA.

In relation to the following demographic features, gender played a role in the performance of the students in the RENR examinations. This perception was voiced by both faculty and students.

5.4.2 Gender

The data showed that approximately 90% of the students enrolled in the nursing programme are females. This demographic feature was cited by both faculty in the interviews and students in the focus group, where they alluded to the possibility that there was an association between gender and performance in the RENR. While this may not be a direct relationship, the participants of the study inferred that the responsibility of being a care giver and head of a family does indeed affect the available time for studying throughout the entire programme, but more importantly the preparation for the writing of the RENR examination.

The analysis of the data from the Nursing Council demonstrated that for the years 2007 to 2012 the overall performance showed that the females (52.7%) performed better than the males (42.9%) on the first time sitting of the RENR. This finding was assessed against the findings outlined in the literature research with similar licensure examinations and was in keeping with Haas et al. (2004) who found that men had a greater likelihood of failure on NCLEX than women.

In contrast to the findings of Haas (2004), Beeson & Kissling, 2001; Sayles, Shelton & Powell, 2003; Yin & Burger, 2003, have reported that gender is not a significant factor which could be correlated with passing or failing the licensure examination. It is interesting to note that even though all groups of participants in the study seemed to indicate that being a female with all of the attendant roles and responsibilities should have a negative impact on the performance of the female students. However, the data generated and the work of Haas (2004) confirms that the females generally outperformed their male counterparts.

BCC will therefore need to pay close attention to this demographic feature and examine the scheduling of lectures and the clinical allocations to facilitate the heavy schedules that the females in the programme negotiate to ensure their improved performance. The scheduling of these activities will therefore need to take into account the consideration that the majority of the student nursing population is female, primarily because nursing is perceived as a female profession. Thus examination of the scheduling of lectures and clinicals will not result in a reduction of the requirements in preparation for the RENR, but will allow for some latitude in the completion of the programme.

5.4.3 Age

An overall assessment of the cumulative performance of all age groups over the six year period being examined showed that the 30-39 years age group was more likely to pass on their first attempt at the RENR (59.1%) as compared to the 19-29 years age group (53.3%) and the 40-49years age group (41.7%). It should be noted that the performance of the 50-59 years age group was not significant in the overall discussion of the performance of the various age groups simply because the actual number of persons in this group, writing the RENR was small in comparison to the other groups. The analysis of age as a demographic factor in the performance of the students in the RENR was also supported by Briscoe & Anema, 1999; Daley, Kirkpatrick, Frazier, Chung, & Moser, (2003) who found that graduates who entered the nursing programme at an age above 23 years were more likely to be successful in the NCLEX.

Additionally, Beeson & Kissling (2001) in another study have found that at the time of writing the licensure examination, greater success is associated with students who are of an older age. Thus the result obtained for this demographic factor was in accordance with these studies. This finding may suggest that there was a greater level of commitment by the older students than by the school leavers who enter the programme and spend time trying to ‘find themselves’.

5.4.4 GPA

The GPA was identified as a likely demographic feature which seemed to be predictive of the performance of students in the RENR licensure examination. The data suggested that there was a possible relationship between the cumulative GPA and the performance of the students in the RENR. The results showed that there was a relationship between the students' cumulative GPA and their performance on the first time writing of the RENR, and that students who achieve a GPA of 3.0 or above were more likely to pass the examination on their first sitting. However, it should be noted that 99% of all students who write the RENR examination will ultimately pass. While this study does show that there is some relationship between the students' GPA and their first time performance, the relationship is not necessarily extended to subsequent attempts.

The GPA has also been assessed by Rollant (2006) who, contrary to Roncoli et al. (2000), stated that the high risk student may not be those with GPA's of 3.0 and below, but those with 3.0 and above, as failures have also been seen with these students and were increasing in numbers. These students had not only failed on the initial sitting but on subsequent attempts. This study therefore has some congruence with Rollant (2006) as was demonstrated by the Table 4.7.

5.4.5 Performance of Students in the RENR Examination

The performance of the students in the RENR was an area of concern which elicited discussion by the faculty during the interview process. During these discussions the main objective was to determine which of the four RENR papers elicited the poorest performance; this was important in determining the measures which should be put in place by BCC in order to improve the overall performance of the students in the RENR. It should be noted that the structure of the RENR has implications for the outcome since the examination is composed of four papers, and students are required to pass each paper. As a consequence, the data gathered indicated that Paper 3 was the paper with the highest failure rate.

This position was supported by the faculty during the interviews, as they either identified the paper by the number (Paper 3) or by its structure (essay). This position was also supported by the information supplied by the graduates on the questionnaire where they identified the

paper they had failed. The data collected from the Nursing Council and BCC for the period 1996 to 2012 further supported that view (see Table 4.15) and showed that Paper 3 has the highest failure rates.

Given the fact that the essay and clinical papers appear to give the greatest difficulty it is important for faculty to ensure that a variety of assessment methods are used. Tabish (2008) has indicated that assessments may be of a wide variety and can include essays, portfolios, case management and multiple choice questions. While a variety of methods are utilized in the BCC programme, participants endorsed the need for more emphasis to be placed on the written aspects of assessment with specific reference to essays.

This finding was therefore of significance to the faculty in terms of the type of assessment techniques utilised in the programme to ensure that students are exposed to and are competent in all forms of assessment. It should however be noted that the data which looked at the overall performance of the students in the RENR suggested that the overall performance of the students is acceptable as almost all of them will eventually pass the RENR even if it is after three chances, therefore the overall performance of the students can be considered to be satisfactory and should not be judged based solely on the first time sitting of the examination.

5.4.6. Additional Factors Affecting Student Performance in the RENR

In examining the factors which had the potential to affect the performance of students in the RENR examinations, several factors were posited by the various participants in the interviews, focus group and questionnaires. There was consensus in relation to the perceived miscellaneous factors which affected student performance. Some of the factors highlighted included clinical placements, teaching methodology, lack of tutorial support, and a wide range of social factors including family commitments and financial considerations. These factors were categorised as internal and external factors and will require the attention of either BCC or the students themselves.

One study undertaken by Arathuzik and Aber (Rollant 2006), also examined factors that affect the pass rate of students in the NCLEX and found that internal and external factors such as family responsibilities, emotional distress and financial burden affected the

performance of the students in the study. This therefore supports the findings of this study, which should lead to the development of strategies to mitigate the effect of these factors on the performance of the students in the RENR.

While this study may not have uncovered new factors when compared to similar studies cited in the literature, the data was new for the Caribbean region as such studies had not been conducted with respect to the RENR and student performance. In the study done by Reid (2000), she indicated that there was no single factor which was responsible for student performance, but instead she suggested that the student performance may have been due to a combination factors. The major factors that were of some concern in that study were; the non-integrated approach to the delivery of the curriculum, poor quality classroom teaching, poor quality clinical supervision, monitoring and evaluation of students in the clinical area and the poor knowledge base of students.

In this study these factors were identified by faculty, students and graduates as possible factors which affect the performance of the students in the RENR. However, additional factors such as age, gender and GPA were also uncovered as possible predictors of their performance. Arathuzik and Abner (Rollant 2006), in support of these findings have highlighted factors such as family responsibility, financial burdens and emotional stress as factors which have the potential to affect the performance of the students.

Hence the results can be used to develop a plan of action by institutions to put measures in place to improve the performance of all students in the RENR. The results of this study are also important to the faculty of the programme as they would now have documented evidence on how the students view their involvement in their training and what is required of faculty to improve student performance. Thus a series of recommendations will be made as a result of this study for the improvement of student success in the RENR.

5.5. Recommendations

Having discussed the results of this study the following recommendations are being made for consideration as a way forward towards the improved performance of the BCC nursing students in the RENR.

- Given the suggestion that the students' performance in the essay papers of the RENR tended to be poorer, than in the objective papers, it is recommended that a writing course be instituted which would ensure that the students have ample opportunity to develop the ability to adequately express themselves in writing thus affording them greater opportunity to prepare for and achieve greater success in the essay papers of the RENR.
- Based on the data from the Nursing Council in relation to which sitting of the RENR the students were most successful, a decision will need to be taken on the method used to determine the overall success of the students in regards to the RENR.
- There should be some arrangement put in place to provide remediation for students whose GPAs are below an agreed level. This would give them more time to prepare for the examination and should lead to an improved performance on the first time sitting of the examination.
- There should be scheduled tutorial sessions throughout the programme of study for students who are not performing well and whose GPA is below an agreed level.
- The BCC should develop a memorandum of understanding with the Queen Elizabeth Hospital and all other institutions for the clinical placement of the students to ensure that preceptors are identified to work with the students in order to facilitate better clinical supervision of the students.
- The curriculum for the nursing programme should be reviewed to rationalise the content with a view of providing additional time for self-study by the students, and to provide some flexible time for persons who have families to manage and care for while they are studying.
- Consideration should be given to the structuring of an alternate part time programme to facilitate students who need to work while studying. This will allow such students to achieve their desired goal of becoming a registered nurse.
- A concerted effort should be made to ensure greater use of the constructivist approach to teaching and learning.

5.6. Implications for Further Research

This study sought to explore the factors which students, graduates and faculty perceived as impacting on the performance of the students in the RENR as a means of evaluating the

overall performance of the nursing students. The factors uncovered and examined throughout this study showed that there were multidimensional and had some level of impact on student performance in the RENR.

This study was able to uncover some of the factors which affect the performance of BCC nursing students in the RENR. The factors identified were similar to those identified in a variety of studies identified in the literature review. The data generated was able to provide some answers to the research questions which guided this study. Hence the graduates and final year students were able to share their perceptions on the factors which they believed had the ability to affect their performance in the RENR.

Additionally, the questions which explored demographic factors such as age, gender, and GPA were given the necessary attention in this study, and were in line with the findings as expressed in similar studies identified in the literature review. The final supporting question associated with the main research question was also treated appropriately, and the participants were able to share their perceptions which were in keeping with the data supplied by the Nursing Council of Barbados.

Despite the fact that the research questions were answered, there is a realisation that there is scope for the expansion of this study into a regional/Caribbean study. With the availability of data, a study can be conducted on the role of the impact of the GPA in the performance of the students in the RENR across the region, and whether there is any association with student performance in the examination.

While the GPA showed the greatest association with the performance of the students, there is need to examine the entry qualifications into the nursing programme, and whether students with a certain CXC/GCE profile on entry are more likely to achieve a higher GPA and perform better in the RENR than those without the said profile. The results of this study can be utilised for the setting of the entry qualifications into the various nursing programmes in the Caribbean region since the RENR was developed to standardise the training, competence and transferability of the Caribbean trained nurses across CARICOM countries.

5.7. Conclusion and Reflections

This research process has been a very interesting journey for me. There was much self-discovery as a researcher, and one fundamental realisation was that the very "thing" you may want to discover is not as easily discovered as it appears. When I started this journey I wanted examine the development of a quality management system for the Nursing Department at the BCC. This was due to my exposure to quality management and my interest in quality. However, after much consideration I decided to change my focus and conduct a study where the results could be immediately implemented. Hence, I turned my attention to a situation that was troubling to me as an educational administrator. As the head of the Division of Health Sciences with direct responsibility for the Department of Nursing, I decided to take a critical look at the factors which potentially affected the performance of the nursing students in the RENR. The primary objective of which was to tailor a special programme for the department to improve student performance.

The title and focus for this research was borne out of much concern with the results of the RENR. This was due to the fact that there were continual comments of the below par performance of the BCC students, which was not in keeping with the performance of other nursing schools in the Caribbean. As a consequence I wanted to explore whether these concerns were founded, and if so, then what could be done to reverse the situation.

Even though I was aware that there was limited research in the Caribbean (Reid 2000) on the performance of students in the RENR, I had not expected such difficulty in obtaining data on student performance in the RENR from the various islands. This lack of data as previously stated proved to be a major limitation for this study due to the fact that a comparative analysis of the performance of the various student cohorts from across the Caribbean region could not be conducted. The reluctance of some countries to share their results could be due to perceived competition among schools of nursing and the fact that if the results for a particular country are poor, then it is less likely for students from their country and other countries to want to enroll in that country's particular programme. While this was a limitation within the context of this study, it has provided future opportunities for research on the performance of the students in the Caribbean region in the RENR.

The results of this study while specifically designed for the nursing programme at BCC when examined within a global context of nursing education indicate that the provision of nursing education has some peculiarities. Nursing education is geared at developing skilled personnel for quality health care delivery. This must be seen within the context of a quality framework where the objective of the training will match the requirements for practice, thus ensuring the 'fit for purpose' of the graduates.

The use of the RENR and other similar licensure examinations are geared towards a system of promoting standards across the nursing profession through the evaluation of basic competencies which are required for entry level practice for the nursing profession. Therefore, the RENR provided a measure of assurance that persons who have successfully completed the RENR can deliver nursing care at a predetermined level that should be consistent, based on the fact that a nursing blueprint has been established to guide the preparation of the students for the RENR examination. This is also of importance since CARICOM governments have determined that there should be a seamless movement of nursing professionals across the Caribbean region.

The outcomes of this study are timely as the BCC is in the process of preparing for accreditation of the institution and its programmes. Therefore, the identification of factors which potentially affect the performance of the nursing students in the RENR can be examined within the context of the ongoing accreditation process. Therefore quality factors as identified by Biggs (2003) under the titles of presage, process, and product, which were also identified by this study, are important to the future development of the nursing programme as BCC seeks to acquire accreditation in the immediate future.

Additionally, the findings of this research are relevant for the BCC as it seeks to improve the delivery of nursing education, with the planned implementation of a Bachelor of Nursing degree in 2015. The research findings and recommendations are therefore timely for administrators, faculty and students, and may influence the development of policies to govern the delivery of the new Bachelor of Nursing degree. Even though this study was focused on the nursing programme, the factors identified with respect to nursing can be extrapolated to the other disciplines that are offered in the Division of Health Sciences.

The results of this study have established that age was of some significance, but gender was not as statistically significant possibly due to the high ratio of females to males in the programme. The GPA was demonstrated to be the greatest predictor of success for students in the RENR examination on their first attempt. However, there are a number of non-academic factors which affect the performance of the students in the RENR and some of these will have to be discussed in detail with the relevant stakeholders in order to develop an orientation programme, which students can be exposed to at the inception of their studies, so that they will avoid many of the pitfalls other students would have experienced.

I have completed my studies, and looking forward with excitement to conducting further research. But one thing is for sure, I have gained additional knowledge and experience in relation to the research methodology and what is involved in academic writing. Additionally, I have also gained much information with regards to nursing education and the various facets that together provide the means of delivering an excellent nursing curriculum. This experience also gave me the opportunity to document the perceptions of the students, graduates and faculty, about the nursing programme at BCC and to develop mechanisms to ensure that subsequent students will have better opportunities when they enroll in the BCC nursing programme.

Finally, despite the difficulties faced, I am convinced that I will have to continue this research as there are more questions than answers, and there will be opportunities to publish studies which are based on the Caribbean reality.

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APPENDIX A

Clapham, Nr. Club Morgan, St. Michael, Barbados

October 9, 2008,

The Principal,
Barbados Community College
Howells Cr. Rd
St. Michael

Dear Dr. Best,

I write to inform you that my studies at the University of Bath are progressing smoothly and that I am preparing to undertake the research project. The proposed title for the study at this time is "The Development of a Quality Management System for the Delivery of Nursing Education at the Barbados Community College: Implications for the Delivery of Quality Nursing care".

I am therefore requesting permission to solicit the participation of five (5) Nursing Tutors and five (5) final year students in the research process.

Please note that all information gathered will be held in the strictest confidence and will be used only for the purpose of the study.

Thanking you in advance for your usual consideration and support.

Cheryl Weekes

BARBADOS COMMUNITY COLLEGE

(Established July1968)

OFFICE OF THE PRINCIPAL
PHONE (246) 426-3186
PBX (246) 426-2858
FAX (246) 429-5935
E-MAIL principal@bcc.edu.bb

All correspondence should be addressed to the Principal

"Eyrie"
Howell's Cross Road
St. Michael
Barbados

Our Ref:P.5/10/08

14th October, 2008

Ms Cheryl Weekes
Club Morgan
St. Michael

Dear Ms Weekes:

I refer to your letter dated 9th October, 2008 in which you informed that your studies in the Doctoral programme at the University of Bath are progressing smoothly and requested permission to solicit the participation of five (5) Nursing Tutors and five (5) final year students in your research.

I note that the information will be used to assist with the completion of your dissertation which is entitled "The Development of a Quality Management System for the Delivery of Nursing Education at the Barbados Community College: Implications for the Delivery of Quality Nursing Care."

Please be informed that permission to conduct your research is granted on condition that the confidentiality and anonymity of individual responses are maintained.

Please accept my best wishes for successful completion of your studies and I look forward to receiving a copy of the dissertation so that it can be placed in the BCC Library.

Yours sincerely

Gladstone A. Best Ph.D
Principal

GAB:si

APPENDIX B

Table: Factors Affecting Nursing Performance (open and close ended questions)from the questionnaire.

QUESTION NO:	QUESTION
Programme Assessment	
5.	The nursing programme is meeting my expectations.
6.	The level of teaching is acceptable.
7.	The curriculum is providing a balance between theory and practice.
8.	My clinical experience is relevant.
20.	External factors may affect the pass rate in the RENR. State whether you believe that any of the following factors could affect your ability to pass the RENR if yes, how? Clinical environment Exam process-grading/consistency(RENR) Access to past(RENR) papers
21.	In your opinion do you believe that writing a comprehensive nursing exam would help you in your preparation for the RENR?
Preparation for the RENR	
9.	I have been given an opportunity to discuss the structure of the RENR with someone who is involved with the management of the exam.
10.	I have been provided an opportunity to discuss the structure and or content of the RENR with someone who had previously taken the exam.
11.	The subject matter taught at BCC appears relevant to what is required for the RENR based on what I know about the exam.
12.	Adequate opportunities have been provided for me to develop and use analytical thinking.
13.	Enough time is being scheduled for revision prior to writing the RENR.
14.	Do you believe that more can be done by the college to prepare students for the RENR exam
15.	Do you think that the failure experienced by previous students in the exam could be attributed to a deficiency in the capacity/ability of the student?

Tutorial Assessment	
16.	Do you find the testing methods used by your tutors to be adequate?
17.	Do you think that your ability to pass this exam is influenced by the level of preparation of your college tutors to deliver the required material?
18.	Do you think that if the students are given the “Blue Print “for nurse training the pass rate would be better?

APPENDIX C

Focus Group Schedule

Thank you all for being here. This is intended to be a free and open discussion to allow you the opportunity to share your opinion in relation to your preparation for the RENR.

1. Do you believe that the learning environment has the potential to affect your ability to perform in your studies?
2. Are there things other than the classroom conditions that you consider to be the learning environment that may have an impact on your learning?
3. Do you feel that you have been adequately prepared to write the RENR?
4. How do you feel about the way in which you are being assessed in your various courses? What do you think about the assessments?
5. Have you had any opportunity to talk to any past students about the RENR?
6. Do you think that you get the level of tutorial support that you need?
7. What is your assessment of the teaching methods used by the tutors?
8. Is there anything at all that you think we need to do to make you feel more comfortable about the exam and your ability to be successful in it?
9. Anything else you want to share, anything that can be done other than the review classes?

Thank you all very much for taking the time to share your thoughts and opinions; this has been very helpful, and interesting.

Schedule of questions for the Faculty interviews

Interview Questions

1. State your name, and title/post for the record
2. How long have you been a practicing nurse
3. Give a brief overview of your work history/experience
4. How long have you worked at the college
5. State your qualifications
6. In your opinion how does the learning environment affect the ability of the student to be successful
7. Are there internal factors which you perceive may affect the performance of the students in the RENR, if so give examples
8. What external factors do you believe may affect student performance in the RENR
9. What is your opinion of the students' performance in the RENR over the past six years
10. What part do you think the curriculum plays in the performance of the students
11. Do you think the curriculum needs to be revised
12. Do you think the academic profile of the student is of major importance to student performance in the RENR? Why?
13. How important is tutorial/lecturer support to the success of the students
14. Do you think that the methods of evaluation of the students both theoretically and clinically are adequate?
15. What are your general observations about the performance of the students in the RENR?
16. What part do you think the administration of the nursing department plays in the entire scenario

APPENDIX D

BCC NURSING PROGRAMME GRADUATES QUESTIONNAIRE

Purpose:

This research is being conducted in partial fulfillment of the Professional Doctorate in Health with the University of Bath, but also as a means of scientifically evaluating the situation as relates to the problem of a low pass rate in the Regional Examination for Nurse Registration (RENR) in CARICOM, by graduates of the BCC Nursing Programme.

I consider you to be an important stakeholder in this process, and value very much your opinions and experiences in relation to the writing of the RENR, and the success rate. Your input will help to facilitate the process towards making the necessary adjustments to the Nursing Programme in order to promote a better outcome of this important examination.

Please note that all information collected, will be held in the strictest of confidence.

Instructions:

Please answer all questions, by ticking the most appropriate response. Where a reason for your response is required, please answer as honestly as possible.

NB: You are **not** required to write your name on the questionnaire.

SEX: Male ☐ Female ☐

AGE: Under 18 ☐ 18-25 ☐ 26-35 ☐
36-45 ☐ ☐ 46+

Student Status: Local ☐ Regional ☐ International ☐

Qualifications:

English Language	☐	Mathematics	☐
Biology	☐	Human & Social Biology	☐
Chemistry	☐	Integrated Science	☐
Physics	☐	Pre-health Sciences	☐

Other _____

1. Please indicate the **primary** reason for undertaking the Nursing Programme.

Upgrade of qualifications ☐
Self-improvement ☐
Change of career ☐
Need to help others ☐
Stipend ☐
Other _____

2. How were your studies financed? (Select **ALL** that apply)

Part time job ☐ Scholarship ☐
Sponsorship ☐ Study leave ☐
Stipend ☐ Personal financing ☐
Loan ☐ Parents/Guardians/Spouse ☐

3. Are you a registered Nursing Assistant?

Yes ☐ No ☐

If yes, please state the number of years? _____

4. Did you have prior work experience in nursing before enrollment in the Programme?

Yes ☐ No ☐

If yes, please state the number of years? _____

5. Did the Nursing Programme meet your expectations?

Yes ☐ No ☐

If no, please indicate the reason/reasons for your answer:

_____
_____
_____

6. Did the method/s of teaching used meet your expectations?

Yes ☐ No ☐

If no, please indicate the reason/reasons for your answer:

_____

_____

_____

7. Did the curriculum provide for a balance between theory and practice?

Yes ☐ No ☐

If no, what would you recommend?

_____

_____

_____

8. How would you rate your clinical experience?

Excellent ☐ Good ☐ Average ☐ Poor ☐

9. Were you aware of the structure of the RENR prior to the examination?

Yes ☐ No ☐

10. At which sitting of the RENR were you successful?

1st ☐ 2nd ☐ 3rd ☐

If 2nd or 3rd, please indicate the paper (s) that you failed:

_____

11. Were you provided with an opportunity to discuss the structure and or content with someone who had previously taken the exam?

Yes ☐ No ☐

12. Did the subject matter taught in the programme adequately prepare you for the examination?

Yes ☐ No ☐

13. Was the revision course offered by the college in preparation for the RENR helpful?

Yes ☐ No ☐

14. Can more be done by the college to prepare students for the examination?

Yes ☐ No ☐

If yes, please indicate what can be done:

_____

_____

_____

15. Were adequate opportunities provided for the development and use of analytical thinking during the programme?

Yes ☐ No ☐

16. Were the testing methods appropriate for the programme?

Yes ☐ No ☐

17. What do you think the high failure for the RENR can be attributed to?

Lack of teacher preparation ☐ Inadequate preparation time ☐

Lack of student preparation ☐ Limited access to resources ☐

Other _____

18. If students were given the "Blue Print" for nursing practice do you think the pass rate would increase?

Yes ☐ No ☐

19. Please indicate the greatest hurdle/s for students associated with passing the RENR?

_____

_____

_____

_____

20. State whether or not you believe that the following external factors affect the pass rate.

If yes, please indicate in what way you believe the pass rate is affected:

- Clinical environment Yes ☐ No ☐

_____
_____
_____

- Examination grading/consistency Yes ☐ No ☐

_____
_____
_____

- Access to past papers Yes ☐ No ☐

_____
_____
_____

- Don't know Yes ☐ No ☐

21. Do you believe that the reintroduction of the Comprehensive Exam would reduce the failure rate in the RENR?

Yes ☐ No ☐

Please indicate the reason/reasons for your answer:

_____
_____
_____

Thank you for your valuable contribution

APPENDIX E

Questionnaire for final year students of the BCC Nursing Programme

Purpose:

This research is being conducted in partial fulfillment of the Professional Doctorate in Health with the University of Bath, but also as a means of scientifically evaluating the situation as relates to the problem of a low pass rate in the Regional Examination for Nurse Registration (RENR) in CARICOM, by graduates of the BCC nursing programme.

I consider you to be an important stakeholder in this process, and value very much your opinions and experiences in relation to the writing of the RENR, and the success rate. Your input will help to facilitate the process towards making the necessary adjustments to the nursing programme in order to promote a better outcome of this important examination.

Instructions:

Please answer all questions frankly and to the best of your ability by circling your choice. All questions in the questionnaire should be answered as all answers will be aggregated and dealt with in a professional and confidential manner. You are not required to write your name on the questionnaire.

What is your gender? ☐ **Male** ☐ **Female**

What is your current age group?

Under 18 ☐ **18-25** ☐ **26-35** ☐

36-45 ☐ **46+** ☐

What is your status as a student?

Local ☐ **Regional** ☐ **International** ☐

Indicate which of the following subjects you have CXC/GCE passes in:

English Language ☐ **Mathematics** ☐

Biology ☐ **Human and social Biology** ☐

Chemistry ☐ **Integrated Science** ☐

Physics ☐ **Prehealth Sciences** ☐

☐

Other _____

1. What is your primary reason for joining the nursing programme at BCC?

To obtain an Associate Degree ☐

Self-improvement/personal enjoyment ☐

Change of career ☐

Money ☐

A need to help others ☐

The available stipend ☐

Other _____ ☐ _____

_____

_____

2. Please indicate how your studies are being financed. **(Select all that apply)**

Part time job ☐ **Scholarship** ☐

Sponsorship ☐ **Study leave with pay** ☐

Stipend ☐ **Personal financing** ☐

Loan ☐ **Parents/Guardians/Spouse** ☐

Personal Savings ☐

3. Are you a registered nursing assistant?
   Yes ☐ **No** ☐

If yes, then for how many years? _____

4. Did you have any experience working in the field of nursing prior to your enrollment in the nursing Programme? ☐ **Yes** ☐ **No**

If yes, how long? _____

5. The nursing programme is meeting my expectations.

Strongly Agree ☐ **Agree** ☐ **Unsure** ☐ **Disagree** ☐ **Strongly Disagree** ☐

Please explain your choice

_____

_____

_____

6. The level of teaching is acceptable.

Strongly Agree ☐ **Agree** ☐ **Unsure** ☐ **Disagree** ☐ **Strongly Disagree** ☐

7. The curriculum is providing a balance between theory and practice.

Strongly Agree ☐ **Agree** ☐ **Unsure** ☐ **Disagree** ☐ **Strongly Disagree** ☐

If you disagree what would you recommend

_____

_____

8. My clinical experience is relevant.

Strongly Agree ☐ **Agree** ☐ **Unsure** ☐ **Disagree** ☐ **Strongly Disagree** ☐

9. I have been given an opportunity to discuss the structure of the RENR with someone who is involved with the management of the exam.

Strongly Agree ☐ **Agree** ☐ **Unsure** ☐ **Disagree** ☐ **Strongly Disagree** ☐

10. I have been provided an opportunity to discuss the structure and or content of the RENR with someone who had previously taken the exam.

Strongly Agree ☐ **Agree** ☐ **Unsure** ☐ **Disagree** ☐ **Strongly Disagree** ☐

11. The subject matter taught at BCC appears relevant to what is required for the RENR based on what I know about the exam.

Strongly Agree ☐ **Agree** ☐ **Unsure** ☐ **Disagree** ☐ **Strongly Disagree** ☐

12. Adequate opportunities have been provided for me to develop and use analytical thinking.

Strongly Agree ☐ **Agree** ☐ **Unsure** ☐ **Disagree** ☐ **Strongly Disagree** ☐

13. Enough time is being scheduled for revision prior to writing the RENR.

Strongly Agree ☐ **Agree** ☐ **Unsure** ☐ **Disagree** ☐ **Strongly Disagree** ☐

14. Do you believe that more can be done by the college to prepare students for the RENR exam? ☐ **Yes** **No** ☐

If yes, give examples of what can be done

_____

_____

_____

15. Do you think that the failure experienced by previous students in the exam could be attributed to a deficiency in the capacity/ability of the student?

Yes ☐ **No** ☐

16. Do you find the testing methods used by your Tutors to be adequate?

Yes ☐ **No** ☐

17. Do you think that your ability to pass this exam is influenced by the level of preparation of your college tutors to deliver the required material?

YES ☐ **No** ☐

18. Do you think that if students are given the "Blue Print" for nurse training the pass rate would be better? **Yes** ☐ **No** ☐

19. What do you anticipate as your biggest hurdle with preparation for the RENR?

_____

_____

_____

_____

20. External factors may affect the pass rate in the RENR. State whether you believe that any of the following factors could affect your ability to pass the RENR and if yes, how.

- Clinical environment **Yes** ☐ **No** ☐

_____

_____

_____

- Exam process-grading/consistency(RENR) **Yes** ☐ **No** ☐

_____

_____

_____

- Access to past (RENR)papers **Yes** ☐ **No** ☐

_____

_____

_____

21. In your opinion do you believe that writing a comprehensive nursing exam would help you in your preparation for the RENR? **Yes** ☐ **No** ☐

Explain your answer

_____

_____

_____

_____

Thank you for your valuable contribution

APPENDIX F

Age category cross tabulation

			Age_category				
			19 - 29	30 - 39	40 - 49	50 - 59	Total
Year	2007	Count	31	16	16	4	67
		% within Year	46.3%	23.9%	23.9%	6.0%	100.0%
	2008	Count	20	17	7	1	45
		% within Year	44.4%	37.8%	15.6%	2.2%	100.0%
	2009	Count	43	19	12	3	77
		% within Year	55.8%	24.7%	15.6%	3.9%	100.0%
	2010	Count	41	10	6	2	59
		% within Year	69.5%	16.9%	10.2%	3.4%	100.0%
	2011	Count	34	12	11	9	66
		% within Year	51.5%	18.2%	16.7%	13.6%	100.0%
	2012	Count	28	15	8	1	52
		% within Year	53.8%	28.8%	15.4%	1.9%	100.0%
Total		Count	197	89	60	20	366
		% within Year	53.8%	24.3%	16.4%	5.5%	100.0%

Student GPA and number of attempts in the RENR exams

Student	GPA	Pass		Student	GPA	Pass
1	2.87	1st		34	3.56	1st
2	3.15	1st		35	2.4	1st
3	2.6	1st		36	3.57	1st
4	2.43	1st		37	3.21	1st
5	2.98	1st		38	2.91	1st
6	3.32	1st		39	3.09	1st
7	3.52	1st		40	2.89	2nd
8	2.6	1st		41	3.09	2nd
9	2.81	1st		42	2.64	2nd
10	3.12	1st		43	2.54	2nd
11	2.8	1st		44	2.89	2nd
12	2.66	1st		45	2.73	2nd
13	2.61	1st		46	3.01	2nd
14	3.23	1st		47	3.17	2nd
15	2.51	1st		48	3.2	2nd
16	2.83	1st		49	2.61	2nd
17	3.66	1st		50	2.56	2nd
18	2.99	1st		51	2.87	2nd
19	3.32	1st		52	3.71	2nd
20	2.66	1st		53	2.89	2nd
21	3.18	1st		54	3.18	2nd
22	2.86	1st		55	2.62	2nd
23	3.09	1st		56	2.69	3rd
24	3.43	1st		57	2.85	3rd
25	3.56	1st		58	2.63	3rd
26	2.92	1st		59	2.5	3rd
27	2.87	1st		60	2.57	3rd
28	2.95	1st		61	2.76	3rd
29	2.52	1st		62	2.43	3rd
30	2.85	1st		63	2.51	3rd
31	3.61	1st		64	2.64	3rd
32	3.16	1st		65	2.51	3rd
33	2.91	1st		66	2.16	FAILED

Green = First Attempt at RENR

Red = Second Attempt at RENR

Blue = Third Attempt at RENR

APPENDIX G

Results of questionnaire for final year students

Number	Question	Yes	No
5	The nursing programme is meeting my expectations.	64(86.5%)	10(13.5%)
6	The level of teaching is acceptable.	65(87.8%)	9(12.2%)
7	The curriculum is providing a balance between theory and practice.	64(86.5%)	10(13.5%)
9	I have been given an opportunity to discuss the structure of the RENR with someone who is involved with the management of the exam.	47(63.5%)	27(34.5%)
10	I have been provided an opportunity to discuss the structure and or content of the RENR with someone who had previously taken the exam.	45(60.8%)	29(39.2%)
11	The subject matter taught at BCC appears relevant to what is required for the RENR based on what I know about the exam.	53(71.6%)	21(28.4%)
12	Adequate opportunities have been provided for me to develop and use analytical thinking.	54(72.9%)	20(27.1%)
13	Enough time is being scheduled for revision prior to writing the RENR.	18(24.3%)	56(75.7%)
14	Do you believe that more can be done by the college to prepare students for the RENR exam?	74(100%)	0(0%)
16	Do you find the testing methods used by your Tutors to be adequate	36(48.6%)	38(51.4%)
17	Do you think that your ability to pass this exam is influenced by the level of preparation of your college tutors to deliver the required material?	56(75.7%)	18(24.3%)
18	Do you think that if students are given the “Blue Print” for nurse training the pass rate would be better?	62(83.8%)	12(16.2%)
21	In your opinion do you believe that writing a comprehensive nursing exam would help you in your preparation for the RENR?	72(97.3%)	2(2.7%)

Results of questionnaire for graduates

Number	Question	Yes	No
5	Did the nursing programme is meet your expectations.	83(86.5%)	13(13.5%)
6	Did the level of teaching meet your expectation?	78(80.4%)	19(19.6%)
7	Did the curriculum is provide a balance between theory and practice.	75(78.1%)	21(21.9%)
9	Were you aware of the structure of the RENR prior to writing the exam?	72(70.6%)	22(23.4%)
11	Were you provided with an opportunity to discuss the structure and or content of the RENR with someone who had previously taken the exam?	74(70.6%)	22(23.4%)
12	Did the subject matter taught in the programme adequately prepare you for the examination?	75(80.6%)	18(19.8%)
13	Was the revision course offered by the college in preparation for the RENR helpful?	73(80.2%)	18(19.8%)
14	Can more be done by the college to prepare students for the RENR exam?	64(74.1%)	26(28.9%)
15	Were adequate opportunities provided for the development and use analytical thinking?	78(83%)	16(17%)
16	Were the testing methods appropriate for the programme?	77(84.6%)	14(15.4%)
18	If students were given the “Blue Print” for nursing practice do you think the pass rate would increase?	77(83.7%)	15(16.3%)
21	Do you believe that the re-introduction of the comprehensive examination would reduce the failure rate in the RENR?	51(61.4%)	32(38.6%)

APPENDIX H

Sample of Quotations from faculty interviews

Interviewee ID	Verbatim Quotes	Themes
Interviewee 'A'	"The curriculum plays a big part because if your curriculum is not consistent with the RENR you are shooting in the dark.	Curriculum's alignment with the RENR
Interviewee 'A'	We will have to look at restructuring our curriculum where some of our courses can be delivered in the evening. It is something we need to look at	Curriculum restructuring
Interviewee 'A'	The curriculum has served me well, and when we compare it to Jamaica and Trinidad, the curriculum is basically the same. What their students are being taught our students are being taught.	Suitability of Curriculum
Interviewee 'B'	I think that the curriculum is good.	
Interviewee 'C'	Basically I think the curriculum is good. Of course a curriculum needs to be tweaked but for right now I think we are very much relevant based on the information taught.	
Interviewee 'D'	I think that the diversity of the programme that we have is good. I think it addresses nearly everything you need for nursing so in that sense it is sound for content.	
Interviewee 'D'	Even though for content it is good, it is packed. There are some courses within the curriculum that can be merged.	Curriculum content
Interviewee 'E'	So there are some courses that can be amalgamated so as not to make the content so heavy, and I think that there are other courses that may be added to give some breathing space.	
Interviewee 'D'	I also think that there are some courses that can be offered part time to ease the coursework load. It will also help those students with financial difficulties	Flexibility of curriculum

	that need to work.	
Interviewee 'A'	Are or exams and teaching methods congruent with what the RENR exam is looking for, this is one factor.	Student assessment and Evaluation
Interviewee 'C'	I believe we are suffering from not questioning the students at a particular level. When they are done, even if we decide that we are going to give them MCQ's as our evaluative method, at the end of our period with them and they go out there and write a report, what are they going to write in the report that is going to reflect the professional nurse, if all they ever have to do is to circle a letter? We are failing; we need to make sure that we assess our students using all the modalities, all the different types, essays and structured questions. We put some calculations in because the reality is, they have to know these steps to get the answer that is on the paper and the only way are going to know it is if we make them practice.	
Interviewee 'D'	Clinically we use a variety of strategies to evaluate the students, and again with the introduction of the continuous assessment, we have added the skills lab where they can do return demonstrations. Then in the clinical area it is not necessarily our staff who will assign the grade so there is objectivity. So I think we have a lot of ways to assess the students.	
Interviewee 'E'	I know for sure that people who are involved with the RENR exam try to structure their exams as is done for the RENR, but I can't speak for across the board.	
Interviewee 'F'	I find that sometimes we ask the students to do too many things in one question and that confuses the student. This does not generally occur in the RENR. But I think all of the questions will now need to be structured properly, they need to be properly moderated, and all of these different things so that the students will understand and get greater benefits.	
Interviewee 'A'	Another factor you have to look at is in terms of the clinical setting because most of the questions are clinically based. Are the students getting the opportunities to get the clinical experiences to	Clinical experience

Interviewee 'E'	develop those competencies in order to transfer that clinical experience into theoretical experience that will help them in the exam setting? This is another factory have to look at. There are not enough opportunities to evaluate whether the student is building the competence in a particular area. They should be given the opportunity to repeat an experience, and then someone evaluates the student to point out their mistakes and then they are given the opportunity to do the remediation.	
Interviewee 'F'	I think we need to have a partnership with the hospital where their staff is required to work with the students; also the students must understand that they must work with the hospital staff.	Partnerships with the clinical sites
Interviewee 'B'	I think that the extended clinical period is pressing the students right up until close to exams and I think that we can restructure that somewhat.	Scheduling of clinicals
Interviewee 'A' Interviewee 'E'	Because of our responsibility as tutorial staff, we need to make sure that our methodology takes into account the seriousness of what we are imparting to the students and that what we teach the students is consistent with what the curriculum requires. I do not think that our students get enough opportunity to practice essay writing, so that is one of my concerns.	Teaching methodology
Interviewee 'A' Interviewee 'B' Interviewee 'D' Interviewee 'E'	Yes, the functional paper is a clinical paper but one of the things about it is, and this is my personal opinion. My concern is the amount of students failing the functional paper and seems to be the area where Barbadians students tend to fall down a lot with the functional paper. There has been some improvement but you still have that paper 3 that is always a problem. I think that students actually have problems writing clearly and expressing themselves in writing, because they are not always as succinct as they should be, and they are not always expressive, they tend to speak in general terms.	RENR paper with the highest failure rate

	Well one of the things for sure you will see that if you examine the results is that most students usually fail in the area of essays, the papers that deal with essays so that is a concern.	
Interviewee 'A'	There needs to be a proper statistical analysis of the situation but we can't do it without the data. My take on the whole RENR is different than most persons because at the end of the day most of our graduates do pass the exam, so it depends on what you are looking at. So for the first sitting where most persons look at the performance, but 90%-95% of our graduates end up passing the exam	Performance of BCC students in the RENR
Interviewee 'B'	So that is my opinion and I will say it anywhere, that our students do very well in the RENR, it is just that people are only looking at the first sitting of the exam.	
Interviewee 'C'	What I am particularly concerned about is that students will fail the clinical exams and they may fail the clinical paper. When we actually look at it, when we get the RENR results we just know that they have passed, we really don't know if those who had passed had a near 4.0 GPA, or got 60 in that exam	
Interviewee 'A'	People always looking at the college but what about the RENR? Is something wrong with their structuring of the questions? Do the questions compare with what is happening in the clinical setting?	RENR examination
Interviewee 'D'	We also have to look at the RENR. Look at the questions, are they testing the students fairly.	
Interviewee 'E'	To be honest with you when I look at the results of the RENR and I can go through the list, I think that the RENR does what is supposed to do.	
Interviewee 'F'	I think that persons are placing too much emphasis on past papers. University has past papers in the library, but students still fail. Whether papers are available or not you still have to apply yourself in order to pass the exam.	
Interviewee 'B'	I am of the view that we need to bring in experts to teach some aspects of the programme.	Tutorial support

Interviewee 'C' Interviewee 'D'	We do have an important role to play because many of the times the students will come to us for added support to guide them through the maze of information. Well, I just feel that we need to have tutorials for the students. We need to have a structure where the students are scheduled for tutorials with particular tutors at specified times so that if the student does not understand something, they can go to the tutors for help.	
Interviewee 'A' Interviewee 'D' Interviewee 'E' Interviewee 'F'	Look at the social dynamics, look at the demographics of our students, the average age, a good few of them have children, there are also a lot of them who are not sponsored and have the financial burden of full time study. The average age of our students need to be looked at as well because that may be a factor. Also, our students are predominantly females; they are also the heads of single parent households. I think that coming close to the end there should be some time for consolidation. I think that the extended clinical period is pressing the students right up until close to exams and I think that we can restructure that somewhat. External factors, again some students come into the programme with many other issues that impact their learning. A lot of social issues, finance issues, and because the programme doesn't allow for that flexibility to work and work enough to support you through the programme, Then there are other issues, social issues like family dynamics, issues from way back, and when the pressure starts to get them they don't know how to cope with their situations. Some may have other social factors; we have students who have children, families to look after, so one of the things that they would need is help in time management. But the other thing I realize is that the students have too much to do. They have tests, projects, the skills	Factors affecting student performance

	lab, and even in the lab some instructors still give them homework.	
Interviewee 'D' Interviewee 'E'	There is one that is not so easily measurable, that is attitude Attitude is definitely an issue because sometimes you wonder why the student chose this profession. So attitude is definitely a problem.	Student attitude
Interviewee 'E'	Give us smaller numbers to work with, which is one of the things we need to do. If you had smaller groups sometimes you can pick up those weaker students.	Class size
Interviewee 'E' Interviewee 'F'	Yes, I think that our selection of students is important. With the current group of students I am teaching, a number of them are struggling and cannot cope with six subjects per semester. I think sometimes it is the type of student because some students struggle to get the entry requirements, and then struggle through the programme.	Student selection
Interviewee 'E' Interviewee 'F'	One of the things that the students need is concurrent theory and practice, so that the theoretical aspects can be more meaningful to them. The other thing is that the clinical instructors and tutors need to work in sync so that when I teach one area, when the students go into the clinical area they would have a greater understanding because the clinical instructors would demonstrate and reinforce the supporting concepts so that the students will have a greater understanding We should also collaborate with the clinical instructors in the skills lab. It makes things easier for the students. I think also that it would help if when the theory is taught that they can be exposed to the patients in keeping with what was taught so that they could bring the theory and practice together in their minds.	Concurrent theory and practice